

# Television Attitudes and TV Types of African-Americans, Latinos, and Caucasians

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The growing influence of ethnic minorities and convergence of television with other communication technologies raises an important issue: are ethnic viewers different in their television attitudes and degree of technology acceptance and, if so, what are the implications for broadcasters and advertisers? This nationally representative study of 871 adult African-Americans, Latinos, and Caucasians revealed significant ethnic differences in the adoption of communication technologies, television programming preferences, and an established TV-type segmentation. Further analysis identified disparities in specific television and technology attitudes. Recommendations are offered for television programmers and advertisers to consider in targeting viewer segments based on their television and technology beliefs.

THE GROWING DIVERSITY of America has important implications for how mass media are consumed and used by marketers to promote their products. Census data show that in 1980 minority groups represented roughly 20 percent of the U.S. population (Gibson and Jung, 2002). Today, they account for over 33 percent and should constitute half our population by 2050 (U.S. Census Bureau, 2004, 2005). Ethnic minorities' significance as media audiences and consumer markets is underscored by their economic stature. Latino and African-American buying power are both nearly \$800 billion and are growing faster than Caucasian households (University of Georgia, 2006). Yet, despite their size and economic clout, only 4 to 8 percent of advertising activity is targeted toward these groups (American Advertising Federation, 2003).

The past quarter century has also witnessed dramatic, technology-driven change in our electronic media landscape. VCRs, which introduced to television viewers time shifting and commercial zipping, grew from just 1 percent penetration of U.S. homes in 1980 to over 90 percent in 2003 (Northwestern University, 2005). In 1981, the year MTV was launched, only 28 percent of U.S. tele-

vision households subscribed to cable television. Today, about 85 percent subscribe to a multichannel video program service and, collectively, advertising-supported cable networks consistently draw more viewers than all national and local broadcast television combined (Flint, 2004; National Cable & Telecommunications Association, 2006).

Tension between television and newer, digital media is apparent in the push and pull of convergence and competition. Approximately 70 percent of U.S. homes have a DVD player, and digital cable service is in an estimated 33 million homes (Consumer Electronics Association, 2006; National Cable & Telecommunications Association, 2006). Internet service is now in 74 percent of U.S. homes, with nearly three-quarters of those users connected by broadband (Nielsen//NetRatings, 2006). Not surprisingly, Americans are spending more time with these and other attention-grabbing communication media (e.g., mobile phones, digital music players, video game players, etc.). For example, in the past three years computer use among active web users has increased approximately 5 hours to 30.5 hours per month (Nielsen//NetRatings, 2006).

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Like the ethnic composition of American society, our media environment is quickly changing. Given ethnic audiences' growing importance, gauging their attitudes toward television and technology is becoming more critical as commercial outlets compete to attract and deliver them to prospective advertisers. This study examines adult African-American, Latino, and Caucasians' communication technology adoption and attitudes, television beliefs, and program preferences. It also examines these ethnic groups through the lens of Rockbridge Associates, Inc/s (2003) TV-Type segmentation analysis, which identifies a range of audience responses to television in today's converging technological environment. By understanding ethnic group differences in their responses to technology within the context of television beliefs, creative message strategies using relevant, customized positioning statements maybe executed (Shimp, 2007}. The results of this study lead to a series of recommendations for the broadcast industry.

#### **ETHNICITY, MEDIA, AND TECHNOLOGY**

The study of media attitudes and communication technology adoption is rooted in a variety of disciplines including marketing, management information systems (MIS), and communications. Rogers' (1995) diffusion model is widely known, and research has demonstrated that key components of

the model—perceived innovation complexity and relative advantage—are important to understanding communication technology adoption (e.g., Lin, 1998,2001). Rogers also recognized the necessity to segment the audience to deliver tailored communications campaigns. In the MIS literature, Davis (1989) introduced the Technology Acceptance Model (TAM.) that examined the relationship between perceived usefulness and ease of use with one's adoption of technology. Moreover, Venkatesh and Brown (1998) noted that these two perspectives rely on audience segments or subsegments sharing beliefs that drive usage or adoptive behaviors. These general principles have been employed by communication researchers to examine the role played by ethnicity.

#### **Ethnicity and communication technology adoption**

Studies considering the relationship between ethnicity (or race) and the adoption of communication technologies have yielded conflicting results. Neuendorf, Atkin, and Jeffres (1998) looked at telephone-based audiotext and fax innovations, finding that race was not a determinant of their use. Conversely, LaRose and Atkin (1992) showed that non-Whites were less likely to use audiotext services than Whites. Examining other communication technologies, Reese (1988) reported that race was not a significant predictor of computer, VCR, or cable adoption. Yet,

Albarran and Umphrey (1993) demonstrated in their study of cable services that Hispanics and Blacks were more likely than Whites to subscribe to a pay-cable channel.

A recent attempt by others to bring clarity to the debate offers still more equivocal evidence. Dupagne and Salwen (2005) found significant differences in ownership of just four communication technologies—CD players, camcorders, mobile phones, and internet service—of 13 studied. No differences were found in the adoption of DVD players, cable television, or personal computers. However, when combining the 13 adoption items into a summated adoption index, and controlling for socioeconomic factors, "ethnicity remained a significant source of influence on communication technology adoption" (Dupagne and Salwen, 2005, P- 27).

More definitive data related to computer and internet service adoption are presented by the National Telecommunications and Information Administration's (NTIA) longitudinal research. These studies provide consistent evidence of an ethnic "digital divide" (NTIA, 1999, 2002). In 1994 the percentage of Whites who owned computers was more than double that of Blacks and Hispanics. Ownership among all groups increased substantially by 1998, but penetration among Whites was still twice that of Blacks, and nearly so for Hispanics. Virtually the same gap existed for internet adoption, with more than twice as many Whites using the internet as Blacks or Hispanics. Significant differences persisted in 2001, despite further growth in computer and internet use by all ethnic groups (NTIA, 2002). In the NTIA's latest report (2004), the data showed internet adoption increased roughly five percentage points for each group with the ethnicity gap remaining about the same.

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Seeking to reconcile the findings to date, Dupagne and Salwen (2005) observed that ethnic differences in the adoption of communication technologies may be "technology-dependent" (p. 22) or perhaps contingent on the recency of the innovation.

### **Ethnicity, media use, and preferences**

Numerous studies have examined the relationship between ethnicity and media attitudes and preferences, often identifying ethnically-based discrepancies. Early research, for example, found that Latinos and African-Americans are more satisfied with television than Caucasians, Asians prefer newspapers while Latinos prefer radio, and that Latinos most enjoy television genres such as soap operas, situation comedies, movies, and game shows (Delener and Neelankavil, 1990; Greenberg, Burgoon, Burgoon, and Korzenny, 1983; Huston et al., 1992). La Ferle and Lee's (2005) recent work offers further confirmation of ethnic differences in media preferences, with African-Americans reporting more time spent viewing television and listening to radio than Latinos and Caucasians. Interestingly, no ethnic difference was found in the time spent with newspapers. This may be the result of a leveling in newspaper use due to the well-documented declines in circulation and time spent reading printed newspapers.

A number of researchers have employed the uses and gratifications perspective for studying media use behaviors. Recognized as a productive theoretical

framework (Lin, 1999), uses and gratifications posits that audience use of specific media and content is motivated by the drive to satisfy a range of psychological needs such as escape, companionship, surveillance, and personal identity (e.g., Katz, Blumler, and Gurevitch, 1974; Rubin, 1983).

Albarran and Umphrey's (1993) examination of television use motivations indicated that African-Americans are more likely to watch television for something to do and Latinos are more likely to use television to spend time with family. African-Americans also reported watching situation comedies, sports, and game shows more often than Caucasians or Latinos. Rios and Gaines (1998) determined that Latino ethnic subgroups differ in their use of general market (English) and ethnic (Spanish-language) media for cultural maintenance. Jeffres' (2000) panel study spanning 15 years also found ethnic media use reinforces ethnic identification. A study of media as a source of health information revealed that while African-Americans and Latinos are more critical of general market media health coverage than Caucasians, minorities still turn to minority media less frequently for health guidance (Brodie, Kjellson, Hoff, and Parker, 1999).

With the emergence of newer communication media, researchers have shown interest in ethnic groups' use of the internet. Kim (2003) found that time spent using the internet was higher for Caucasians and Asians than for African-Americans and Latinos. Appiah's (2003)

investigation showed that African-American internet users spend more time browsing sites targeting blacks than those targeting whites, while Caucasians exhibit no browsing differences based on a site's racial orientation. Howard, Raine, and Jones' (2001) analysis of data collected in the 2000 Pew Internet & American Life Project revealed differences in how ethnic groups use the internet. For example, on a typical day 49 percent of Caucasians send and read email compared with just 27 percent of African-Americans. Furthermore, 21 percent of Caucasians use the internet to get news, but only 12 percent of African-Americans do. The data indicate African-Americans are more likely to play games, check sports scores, and look for religious and spiritual content.

Taken in total, the literature points to evolving ethnic differences in communication technology adoption, motivations for media use, media attitude, and content preferences. Yet, much remains to be learned about ethnic differences in television attitudes at the intersection of television and technology beliefs. This study seeks to better understand ethnic audiences in the context of a fast changing television and technology environment. Informed by these earlier studies, and the recently developed TV-Type segmentation discussed below (see Rockbridge Associates, Inc., 2003), we pose four research questions:

- RQ1:** To what extent do ethnic groups differ in their communication technology adoption?
- RQ2:** To what extent do ethnic groups differ in their television program preferences?
- RQ3:** How does the five-category TV-Type segmentation vary across ethnic groups?

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RQ4: What differences exist among ethnic groups in terms of their television and technology beliefs that may influence usage or adoption behaviors?

### **METHOD**

This study is an analysis of data collected as part of the December 2002-February 2003 administration of the National Technology Readiness Survey (NTRS). The NTRS, conducted annually since 1999, is a computer-assisted telephone survey co-sponsored by the Center for e-Service at the University of Maryland's Robert H. Smith School of Business and market research firm Rockbridge Associates, Inc., Great Falls, VA. The survey tracks attitudes about technology and behaviors related to e-services (University of Maryland, n.d.).

### **Subject selection**

The survey employed random-digit dialing techniques to obtain a representative sample of U.S. adults 18 years or older. African-Americans and Latinos were oversampled in this administration to ensure these groups were interviewed in sufficient numbers for the desired statistical analysis. The oversampling of Latinos utilized a database of listed Latino surnames. Oversampling of African-Americans used U.S. Census data in conjunction with local telephone directories to target areas with the highest concentration of African-Americans.

Up to four attempts were made to contact busy, no answer, and machine an-

swered numbers. For Latino respondents bilingual interviewers conducted the survey in English or Spanish, depending upon their preference. Sixty-three percent of Latino respondents opted for Spanish, 37 percent preferred English or did not have a preference. The mean duration of each interview was 21.4 minutes. The 2003 survey's statistical margin of error is  $\pm 3.4$  percent (95 percent confidence level) for questions based on the full sample.

### **Measures**

Respondents were asked 14 items to measure motivations, beliefs, and uses of television and technology with response choices ranging from *strongly disagree* coded as "1" to *strongly agree* coded as "5." These are the same items used to develop and test the TV-Type segmentation.<sup>1</sup>

The 14 items can be conceptualized as constituting four broader belief dimensions, or themes, that include:

1. *TV-centric*, or the *degree of attraction to the medium* (e.g., watching too much television can be harmful, television is a good use of time, watching television can help to achieve life goals, others seek my advice about shows to watch, like to read about television programs);

2. *technology-centric*, or the *degree of general attraction to technology* (e.g., new technologies are mentally stimulating, can figure out new technologies without help, others seek my advice on new technologies);
3. *degree of insecurity with technology* (e.g., it's not safe to give a credit card number online, not sure information given online gets to the right place, desire good information on TV content so only watch desirable shows, the number of television program choices is overwhelming); and
4. *degree of control/discomfort with technology and TV* or the *perceived lack of control and discomfort with both* (e.g., it's hard to figure out when and where to find good programs, feel taken advantage of by more knowledgeable technical support providers).

From these themes, common beliefs or attitudes regarding television and technology that are unique from the general population were identified. A five segment classification structure was discovered and replicated (Rockbridge Associates, Inc., 2003): TV Innovators, Convergent Viewers, Passive Viewers, Media Controllers, and TV Skeptics. Table 1 illustrates the composite of beliefs that defines each classification.

A profile and the percentage of U.S. adults belonging to each segment are provided below:

TV *Innovators* (24 percent). Interested in new technologies, TV Innovators consider themselves influencers because they are sought out for advice on new technology. This group values television, researches new programming, and is more likely to subscribe to satellite television and digital cable. An ethnically diverse segment, TV Innovators' income tends to be lower than average and fewer hold advanced degrees.

<sup>1</sup>Segmentation derivation details (factor structure, cluster development, and classification) are available from the authors.

**TABLE 1**  
**TV Beliefs and Segmentation Structure**

	<b>TV Innovators</b>	<b>Convergence Viewers</b>	<b>TV Skeptics</b>	<b>Media Controllers</b>	<b>Passive Viewers</b>
TV-centric	H	M	L	L	H
Tech-centric	H	M	L	H	L
Degree of insecurity with technology	M	M	H	L	H
Degree of control/discomfort with technology and TV	L	H	M	H	M

Source: Rockbridge Associates, Inc. (2003)  
 Note: H = high, M = moderate, L = low

*Convergence Viewers (23 percent).* Convergence Viewers are open to new technologies, enjoy viewing television, and believe it has a positive influence on their lives. Distinguished by heavy television viewing yet only moderate levels of television technology ownership and knowledge, Convergence Viewers tend to be of average age, more ethnically diverse, and possess average education.

*TV Skeptics (23 percent).* Electing to avoid television, TV Skeptics are very light TV viewers, consider television mentally and physically harmful, and find the numerous programming choices overwhelming. They are uninterested in technology and find it frustrating. TV Skeptics tend to be older adults of average education and income with fewer children in the household.

*Media Controllers (17 percent).* Driven by their desire to manage media and content, Media Controllers are excited by technology. They are partial to learning and using new technologies and consider television a poor use of their time. When watching television, they view content they have thoroughly researched. Demographically, Media Controllers are somewhat younger, have children in the household, higher income, and education.

*Passive Viewers (13 percent).* Believing that viewing television will help them to

achieve their goals, most Passive Viewers see television as having few negative health consequences. Set apart by their limited interest in technology, Passive Viewers are heavy users of television yet report difficulty locating desirable programs. Passive Viewers tend to be female, lower in education and income, and older than other viewers.

Television technology adoption was measured in a series of nominally scaled, yes/no, questions. The items covered ownership of a home computer, digital video recorder (DVR), and subscription to cable television, digital cable, satellite television, and internet access services.

Television program preferences were measured from a list of 12 program genres (e.g., movies, situation comedies, dramas, soap operas, reality programs, news, cartoons, nature shows, documentaries about history and people, how-to programs, talk shows, and music) in a two question process. Interviewees were first asked which program types they watched at least monthly. Then, respondents were asked to indicate which of those viewed is "your favorite." The "favorite" percentage scores are reported here as participants' program preference.

Sociodemographics were also measured. Ordinal scales were used to mea-

sure education (coded as *less than high school* — 1, *Post doctorate* — 7) and income {coded as *less than \$10,000* = 1, *\$200,000 or more* — 10). Age, gender, and ethnicity were collected as well. Ethnicity was confirmed by asking a survey screening/classification item at the beginning of the call. The CATI interviewer coded gender while respondents were asked their age (in years) at the end of the survey.

#### Data analysis

We analyzed the responses of the African-American, Caucasian, and Latino survey participants. To address the research questions, cross tabulation, analysis of variance, and post hoc comparative techniques were used. For communication technology adoption (RQ1), ChUsquare tests were conducted to test for ethnic group differences. Similarly, for television viewing preferences (RQ2) measured by respondents' favorite show, Chi-square was used to test for association by ethnic group. The number of hours respondents reported watching television in a typical week was also reported. These two variables provide an analysis to compare with previous findings and add to the description of the segmentation type. To address RQ3, Chi-Square was used to test the TV-Type segmentation structure for

segment membership differences across ethnic groups.

For RQ4, to thoroughly identify ethnic differences across each of the 14 attitude items, an analysis of variance was conducted with post hoc comparisons (least significant difference).

## RESULTS

In total, 871 respondents were included in the analysis. In terms of ethnicity, 47 percent were Caucasian ( $n = 407$ ), 28 percent African-American ( $n = 244$ ), and 25 percent Latino ( $n = 220$ ). The sample is consistent with the U.S. Census 2000 Population Estimates for ethnic groups and the socioeconomic indicators of age, income, gender, and education. Caucasians were older (average = 48 years), better educated (34 percent had some college education), and had higher income levels (almost 20 percent earned between \$50,000 and \$75,000). The average age of the African-Americans was 43 years with 38 percent having a high school degree or a GED and almost 23 percent earning between \$20,000 and \$30,000. Latinos were younger with an average age of 41, 23 percent of households earning between \$10,000 and \$20,000, and 38 percent hav-

ing a high school education or GED. The gender breakdown for survey respondents by ethnic group was: Caucasian, 57 percent female/43 percent male; African-Americans, 35 percent male/65 percent female; and Latinos, 55 percent male/45 percent female.

Table 2 provides the results for RQ1. Of the six communication technologies queried, ethnic differences were found in the adoption of three. Caucasians have a significantly higher rate of ownership of home computers ( $X^2 = 61.17$ ,  $df = 2$ ,  $p < 0.01$ ) and internet access ( $X^2 = 60.01$ ,  $df = 4$ ,  $p < 0.01$ ). These findings are in line with the NT1A (1999, 2002) research. A higher percentage of Latinos subscribe to satellite television ( $X^2 = 12.10$ ,  $df = 2$ ,  $p < 0.01$ ). Interestingly, the gap in digital cable subscribership between Caucasians and the other groups, while not meeting the statistical standard, does approach significance ( $p < 0.10$ ). No ownership differences were found in cable television subscription or DVR ownership. In these instances, the absence of ethnic differences may be explained by the recency of these innovations. Available for decades, cable television has been widely adopted by all strata of our society. Conversely,

DVRs are so new it is likely adoption has been largely by innovators and early adopters (Rogers, 1995), transcending ethnic group membership.

Table 3 provides the results for RQ2. The Chi-square revealed a significant difference in the program preferences of Caucasians, African-Americans, and Latinos ( $X^2 = 90.98$ ,  $df = 22$ ,  $p < 0.01$ ). Substantial "favorite" program differences exist across ethnic groups for dramas, soap operas, reality, cartoons, and news. A higher percentage of Caucasians favor dramas than African-Americans and Latinos. A greater proportion of African-Americans and Latinos prefer soap operas than Caucasians. Far more Latinos prefer news than African-Americans and Caucasians while African-Americans display greater interest in reality shows and cartoons than the other ethnic groups.

Preference similarities are most apparent for situation comedies, documentaries, how-to, talk, and music programming. Notably, despite variation in magnitude all three ethnic groups claim their top two favorite genres are movies and news. Complementing these findings, reported hours spent watching television in a typical week indicate that African-Americans watch

**TABLE 2**  
Communication Technology Adoption by Ethnic Group

Technology	Caucasian ( $n = 407$ )	African-American ( $n = 244$ )	Latino ( $n = 220$ )	Chi-Square	df
Home computer	78.4%	58.6%	49.0%	61.17**	2
Internet access	76.6%	60.7%	46.2%	60.01**	4
Cable TV	70.0%	75.7%	67.3%	4.29	2
Digital cable	43.3%	54.7%	55.1%	5.59*	2
Satellite TV	19.3%	16.4%	28.9%	12.10**	2
DVR	4.8%	9.1%	6.7%	1.01	2

Note. The internet access percentages include access from both home and work.

\* $p < 0.10$ , \*\* $p < 0.01$

**TABLE 3**  
Program Preferences by Ethnic Group

Program Type	Caucasians ( <i>n</i> = 396)	African-Americans ( <i>n</i> = 237)	Latinos ( <i>n</i> = 213)	Total ( <i>n</i> = 846)
News	18.7%	13.1%	33.3%	20.8%
Movies	17.9%	21.2%	16.4%	18.4%
Documentaries—history, people, places	13.1%	9.3%	8.5%	10.9%
Situation comedies	10.1%	9.3%	9.9%	9.8%
Dramatic series	14.4%	8.4%	2.3%	9.7%
Soap operas	3.5%	8.4%	9.9%	6.5%
Real life/reality shows	4.5%	8.4%	1.9%	5.0%
Documentaries, nature	4.5%	4.6%	6.1%	5.0%
Music	4.5%	3.8%	5.2%	4.5%
How-to programs	5.1%	3.8%	2.8%	4.1%
Cartoons	1.8%	6.8%	0.9%	3.0%
Talk shows	1.8%	3.0%	2.8%	2.4%

Note:  $X^2 = 90.98$ ,  $df = 22$ ,  $p < 0.01$

significantly more (average hours = 18.41) than both Caucasians (average hours = 14.40) and Latinos (average hours = 11.71) ( $F = 10.798$ ,  $df = 2$ ,  $p < 0.01$ ). These differences are consistent with La Ferle and Lee's (2005) data.

There are also significant differences in TV-Type segment membership by ethnic group (see Table 4). These results address RQ3. African-Americans and Latinos are both more likely to be TV Innovators and less likely to be TV Skeptics and Media Controllers, respectively. For Caucasians, a higher percentage are Media Controllers and a lower percentage are TV Innovators. The percentage of each ethnic group emerging as Convergence Viewers and Passive Viewers is largely in-line with the total sample.

RQ4 focused on understanding the underlying beliefs or individual components of the TV-Type segment membership and differences across ethnic group. This is a

**TABLE 4**  
TV-Type Segment by Ethnic Group

Segment	Caucasians ( <i>n</i> = 387)	African-Americans ( <i>n</i> = 229)	Latinos ( <i>n</i> = 181)	Total ( <i>n</i> = 797)
TV innovators	19.9%	31.4%	34.8%	26.6%
Convergence viewers	22.7%	21.8%	20.4%	22.0%
TV skeptics	22.2%	15.7%	21.0%	20.1%
Media controllers	21.4%	14.0%	11.0%	16.9%
Passive viewers	13.7%	17.0%	12.7%	14.4%

Note:  $X^2 = 27.693$ ,  $df = 8$ ,  $p < 0.01$

unique contribution of the study as the ability to focus on the ethnic differences across the components of the segment classification structure identifies opportunities within the broadcast industry. To explore this further, an ANOVA with post hoc comparisons was performed to highlight any differences between ethnic groups

on each survey item. Linear regression was used to check for the effect of the socioeconomic variables—age, gender, income, and education—on ethnicity. In keeping with Dupagne and Salwen's (2005) stepwise regression results, ethnicity remained a significant predictor for all, but two of the 14 items.

As revealed in Table 5, African-Americans and Latinos are more TV-Centric than Caucasians. This is reflected in their significantly higher scores on certain underlying beliefs, such as television is a good use of one's time and others seek their advice on television programs. Thus, it was not surprising that both groups would also surpass Caucasians in the time they invest reading about and researching television programs. Ethnic groups did not differ in their belief that viewing too much television is harmful.

The individual Technology-Centric items also yielded interesting group differences. African-Americans tend to be the most Technology-Centric, holding a significantly stronger belief than Latinos that new technology is stimulating and more strongly agreeing than Caucasians that others seek their advice on new technology. The ethnic groups did not differ in their perceived ability to master new technology.

Regarding Insecurity with Technology and TV, African-Americans report somewhat greater insecurity than Latinos and

Caucasians when asked if information given online gets to the "right" place. Both Latinos and African-Americans find television choices more overwhelming than Caucasians. This appears consistent with the TV-Centric analysis in which both ethnic groups were spending time researching programs and would potentially feel overwhelmed. No ethnic differences emerged in the desire for good content and perceived safety of online credit card use.

As for Control and Discomfort with Technology and TV, African-Americans

**TABLE 5**  
Television and Technology Attitude Item Means by Ethnic Group

Survey Items	Caucasians (n = 402)	African-Americans (n = 243)	Latinos (n = 215)	F-Score
<i>TV-centric items</i>				
Too much TV is harmful.	3.60	3.56	3.77	1.622
Read about and research TV programs	2.58	3.32 <sup>a</sup>	3.29 <sup>a</sup>	29.507**
TV is a good use of my time.	2.42	2.94 <sup>a</sup>	2.98 <sup>a</sup>	16.590**
TV helps achieve my goals.	2.32	2.68	2.81	11.463 <sup>c</sup>
Others seek advice on TV programs	2.27	3.07 <sup>a</sup>	2.93 <sup>a</sup>	33.692**
<i>Technology-centric items</i>				
New technology is stimulating.	3.76 <sup>b</sup>	3.84 <sup>b</sup>	3.49	5.870**
Can figure out new technology without help	3.06	3.24	3.13	1.332
Others seek your advice with new technology	2.64	2.93 <sup>a</sup>	2.78	3.122*
<i>Insecurity with technology items</i>				
Desire good TV content information so watch shows comfortable with	3.90	3.87	3.71	1.626
Not safe to give credit card number online	3.66	3.90	3.76	2.029
Not sure if information given online gets to the "right" place	3.37	3.79 <sup>a,b</sup>	3.34	9.170**
TV choices are overwhelming.	3.16	3.64 <sup>a</sup>	3.48 <sup>a</sup>	9.697**
<i>Control and discomfort with technology items</i>				
Feel taken advantage of by technical support	2.88	3.28 <sup>a</sup>	3.04	6.552**
Hard time finding good TV programs	2.58	2.74	2.87	3.058 <sup>c</sup>

\* $p < 0.05$ , \*\* $p < 0.01$

Note: Superscripts indicate statistically significant differences at  $p < 0.05$  using the least significant difference procedure for post hoc analysis.

<sup>a</sup>Higher than Caucasians

<sup>b</sup>Higher than Latinos

<sup>c</sup>Linear regression, on this item, indicated that controlling for income, education, age, and gender removed ethnicity's significant contribution.

expressed a significantly stronger belief about being taken advantage of by technical support than Caucasians. This finding for African-Americans, combined with their higher reported insecurity, and weighed against their higher technology-centric (positive) beliefs may seem paradoxical. However, the coexistence of both positive and negative reactions to a technology is well documented. Mick and Fournier's (1998) comprehensive study indicates that an individual's reaction to technology is often a combination of paradoxes. They present a taxonomy of eight different response combinations that technology may trigger (e.g., engaging/disengaging, control/chaos). Of particular note here may be the competence/incompetence paradox whereby a technology can lead to "feelings of intelligence or efficacy . . . and feelings of ignorance or ineptitude" (Mick and Fournier, 1998, p. 126). Individuals adopt technology to benefit their work and personal goals, without changing their negative perceptions or beliefs, by employing psychological and behavioral coping strategies.

## DISCUSSION

This study updates our understanding of ethnic audience adoption of communication technologies, preferences for television content, and offers new insights regarding television and technology attitudes in a period of dramatic industry change. In keeping with the research literature, ethnic audiences continue to exhibit differences in their media attitudes.

One measure of technology acceptance attitudes is adoption of technology-based products or services (Parasuraman and Colby, 2001). As presented in Table 2, there are some significant ownership differences among the three ethnic groups in this study. Similar differences were also identified in the longitudinal research conducted by the NTIA (1999, 2002, 2004),

## **African-Americans and Latinos judged television more favorably than Caucasians although both minorities also expressed the need to invest considerable time researching the growing range of viewing choices.**

suggesting a continuing ethnic gap. Specifically, Latinos report higher ownership of satellite television, in accordance with their TV Innovator media segment affiliation. Moreover, consistent with their Convergence Viewers and TV Skeptics media affiliations, Caucasians demonstrate greater ownership of home computers and internet access.

Ethnic variation in program preferences persists with little agreement in "favorite" shows for the drama, soap opera, reality, and cartoon genres. Yet Caucasians', African-Americans', and Latinos' endorsements for situation comedy, documentary, how-to, talk, and music programming were much more consistent, suggesting some overlap in taste. Interestingly, for each group news and movies emerged as the top program types, a finding consistent with data collected over a decade ago by Albarran and Umphrey (1993).

Ethnic differences endure in television attitudes and emerged in technology beliefs as well. Like earlier studies (e.g., Albarran and Umphrey, 1993; Greenberg, Burgoon, Burgoon, and Korzenny, 1983; Huston et al., 1992), and more recently La Ferle and Lee (2005), African-Americans and Latinos judged television more favorably than Caucasians although both minorities also expressed the need to invest considerable time researching the growing range of viewing choices. Moreover, African-Americans' relatively high level of comfort with television does not ex-

tend fully to online technology as suggested by their significantly less positive sentiments. While African-Americans find new technology stimulating and are approached for technology advice, they have doubts when sending information and are suspect of technical support. This discomfort may explain why African-Americans spend more time with welcoming, Black-targeted websites (Appiah, 2003) and their online activities tend toward entertainment rather than communicating through email or gathering news and product information (Howard, Raine, and Jones, 2001).

The TV-Type analysis also indicates differences exist in the audience segmentation and reveals the extent to which ethnic group members are differentially distributed across those segments. Notably, over 30 percent of African-American and Latino audiences are TV Innovators; their predominance will make those segments of particular interest to industry decision makers. These results enable us to offer recommendations for the television industry to consider in programming and delivery of targeted viewers to advertisers based on their technology beliefs. The enhanced understanding of viewer attitudes is relevant to television programmers, especially niche cable networks, which may have greater capability to target their audiences through targeted programming, a greater focus on advertising, or promoting high-tech products and services. Multi-channel video service providers and other

television technology firms can gain insights as well.

African-American and Latino audiences both find television viewing a positive experience and a valued use of their time (Albarran and Umphrey, 1993). With over 30 percent categorized in the TV Innovator segment they are sought by others for advice on television programs thus earning the label "opinion leaders." Successfully targeting African-Americans and Latinos can be achieved by their early involvement in program development research to align new shows with their entertainment values. Promotional efforts for new shows should also be directed at these groups through relevant media to leverage their tastemaker status. This may be best achieved through the use of guerrilla marketing and viral communication techniques to generate positive buzz afforded by word-of-mouth communication. While enjoying a wide range of programming, one characteristic of TV Innovators is their television viewing is fun-oriented; they tend to prefer movies and enjoy cartoons more than others. TV Innovators are also comfortable with technology and value its contribution to achieving their home and work goals. This comfort level suggests a lower level of perceived innovation complexity (Lin, 1998, 2001) and higher relative advantage. Hence, they can usually master technologically advanced products on their own and are often sought after by others for advice on new technology. Advertisers of high-tech products and services, especially consumer electronics, would be able to target their messages to the technology and television opinion leaders by selecting programs that attract this segment.

An important opportunity also exists for advertisers to reach Latino audiences through Spanish-language television (Roslow and Xicholls, 1996). Television use is growing among Latino viewers

and Univision and Telemundo, the leading Spanish-language television networks, reach nearly 40 percent of Latino 18-49 year old viewers in prime time (Consoli, 2005; Nielsen Media Research, 2006). Moreover, Nielsen Media Research has found that Spanish-language television viewers pay more attention to commercials—40 percent discuss advertisements with their family and friends—and 52 percent state their purchase decisions are more likely to be influenced by advertisements (Direct Marketing Association, 2004). The high percentage of Latinos found in the TV Innovator segment suggests that Spanish-language advertising should be geared toward the group's innovativeness.

A model for targeting the Caucasian audience is, perhaps, more challenging to develop than for Latinos or African-Americans. With generally less positive attitudes regarding television than African-Americans and Latinos, changing Caucasians' perceptions that watching television is not a good use of time or helpful to achieving one's goals requires long-term communication. A more efficient approach to promotion may be to focus on the television technology that delivers, displays, and manages programming rather than on the programming itself. Caucasians found in the Convergence Viewer (22.7 percent) and Media Controller (21.4 percent) TV-Type segments are likely targets for this communication. Messages might emphasize the benefits of digital services such as their vastly expanded programming menu and control-enhancing (e.g., programming on demand) capabilities. The control inherent in DVRs available through satellite and cable providers might also be featured. Moreover, the appeal of experience-enhancing flat-screen LCD and plasma display technologies could also be leveraged, perhaps in copromotions between manufacturers and programmers. Advertisers' message strategy

should focus on their innovativeness with both television technology and other high-tech products and services. The preferences of the Media Controllers are news and nature programs while the Convergence Viewer does not have a specific programming orientation.

Looking ahead, the ethnic composition of America will continue to change and television and technology will continue to converge. Indeed, in this environment it is likely that audience attitudes, beliefs, and preferences will shift, portending the need for further study. Ongoing research is needed to appreciate the direction and emerging trends of ethnic audience inclinations toward television. Future research should focus on examining how technology is affecting our relationship with television. How does growing access to empowering digital technologies change ethnic groups' expectations for television? Will the explosive growth of programming available through technologically enhanced delivery fundamentally alter our viewing habits? These are among the many questions deserving of further examination. 

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