

Still Glued to the Box? Television Viewing Explained in a Multi-Platform Age Integrating Individual and Situational Predictors

HARSH TANEJA

University of Missouri, USA

VIJAY VISWANATHAN

Northwestern University, USA

This study examines the factors that influence time spent with different genres of television content in the contemporary media environment. An integrated framework of television use, incorporating both situational and individual determinants, is tested on data obtained by observing the cross-platform media use of 495 individuals in the United States. The findings indicate that even in this high-choice media environment, situational factors such as availability and group viewing moderate the roles of individual traits and needs. In addition, the study reveals the complementary relationship between entertainment and news, and the substitution of these genres on live television by time-shifted television.

Keywords: television viewing, audience availability, program choice, media consumption, group viewing

Watching television became a practice embedded in the rhythms of people's daily lives in the latter half of the 20th century. However, in the contemporary media environment, many platforms compete with television for attention. Yet evidence suggests that individuals in the United States continue to consume copious amounts of television, and a recent study estimates that individuals watch on average more than 35 hours of television every week, of which only five hours is time shifted (The Nielsen Company, 2013).

Historically, television viewing has been explained using two dominant perspectives. The first perspective assumes audiences are active and watch television to satisfy their needs, while the second holds that situational factors such as audience availability, structure of the media environment, and group viewing significantly influence television viewing. Only recently have studies examined the effects of both individual and situational factors, either on television viewing as a whole (Cooper & Tang, 2009), or on a particular genre of television such as news (Wonneberger, Schoenbach & Meurs, 2011). This study

Harsh Taneja: harsh.taneja@gmail.com

Vijay Viswanathan: V-viswanathan@northwestern.edu

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analyzes unique data collected by following 500 people for an entire day and extends ongoing research in this domain.

The article consists of three sections. In the first, we present our theoretical framework after briefly reviewing prior studies that have examined the role of situational and individual factors in explaining television use. We then present our hypotheses, where we specifically focus on the moderating effects of situational factors on individual factors. In the second section, we describe in detail our research design, the estimation methodology, data, and results. Finally, we conclude with a discussion of the contributions and limitations of the study.

Theoretical Framework

Media use has been studied using two distinct theoretical perspectives, emphasizing individual and the situational determinants respectively. In this section, we first review prior work that examines television viewing using each of these perspectives. We then present a framework that integrates both individual and situational determinants.

Individual Determinants of Television Viewing

This perspective takes a micro-level approach, which posits that television viewing is an outcome of an individual's needs and preferences. Studies in this tradition rely on theories such as selective exposure, social cognition, and mood management, which focus on psychological states and predispositions as precursors to media choice (e.g., Hartmann, 2009).

A dominant approach within this tradition is the "uses and gratifications" (U &G) research, which assumes that audiences are active agents who consume media to gratify their individual needs and wants (e.g., Katz, Blumler, & Gurevitch, 1973; Papacharissi & Mendelson, 2007, 2011). Such individual needs or viewing motivations include relaxation, entertainment, companionship, information seeking, habit, pastime, and escape.

Uses and gratifications (U & G) has been used to explain usage across a range of media platforms as well as content genres. Studies have explored gratifications associated with traditional media platforms such as newspapers, radio, and television (Rubin, 1983), as well as new media such as the Internet (Ferguson & Perse, 2000). Genres studied using U & G include soap operas (Perse, 1986), news programs (Palmgreen & Rayburn, 1979), reality TV (Papacharissi & Mendelson, 2007), and, more recently, online social networking sites such as Facebook (Papacharissi & Mendelson, 2011) and Twitter (Chen, 2011).

Specifically for television, Rubin (1983) categorized viewing motivations into two broad dimensions: "ritualistic" and "instrumental" television use. According to this classification, ritualistic use refers to the more passive (or less active) aspects of media use, tied to viewing motivations such as habits, relaxation, and finding ways to pass the time (Rubin, 1984). Instrumental use, in contrast, refers to goal-directed viewing, where viewers seek specific content because of certain needs—for example, the need for information (Rubin, 1984). Cooper and Tang (2009) found that both these dimensions significantly influence television viewing time, with ritualistic use explaining greater variance as compared to instrumental use.

U & G studies have also identified specific motivations to explain the viewing of different genres of television. For example, studies have found that instrumental motivations (as opposed to ritualistic

motivations) better explain viewing of genres such as sports, where viewers are thought to specifically seek out content rather than watch television out of habit (e.g., Cooper & Tang, 2012). Gantz & Wenner (1995) suggest that viewers watch sports to follow their favorite teams and also enjoy the uncertainty of sports. Wonneberger et al. (2011) studied the drivers of news viewing and found that political interest and preference for news programs is associated with increased television news viewing. In contrast, viewing of entertainment content such as soap operas or reality TV is more associated with habitual viewing of TV, and hence is explained by ritualistic motivations such as need for relaxation and companionship (Papacharissi & Mendelson, 2007; Rubin & Perse, 1987). Akin to U & G, economic models of program choice also assume that audiences are well informed and have distinct program-type preferences that shape consumption (Owen & Wildman, 1992; Waterman, 1992).

Studies have also found that individual traits such as age, education, gender, and income significantly influence television viewing. For instance, even after controlling for access and viewing motivations, studies across countries find that older viewers watch more television, especially news (e.g., Cooper & Tang, 2009; Ksiazek, Malthouse, & Webster, 2010; Taneja, Webster, Malthouse, & Ksiazek, 2012; Wonneberger et al. 2010). Gender too explains differences in television use (Comstock, 1989). Although females watch more television than males overall (Cooper & Tang, 2009; Taneja et al. 2012), certain genres such as sports enjoy significantly more male viewership (Tang & Cooper, 2012). Different viewing motivations between men and women explain gender differences in television viewing. Men are thought to be more goal directed in their viewing and seek specific content, whereas women are more relationship oriented and hence likely to watch more out of habit (Nathanson, Perse, & Ferguson 1997).

Situational Determinants of Television Viewing

This perspective privileges the role of situational determinants such as audience availability, group viewing, and structure of content offerings over individual needs and preferences in explaining media use. Audience availability refers to the time people have for television viewing. Simply put, people watch television when they are available (i.e., have free time) and have access to television. Therefore, availability leads to a decision to watch television that often precedes program choice (Webster & Wakshlag, 1983). Studies find that people watch television at the same time each day, irrespective of what programs are on, since they are available at these times (Barwise, Ehrenberg, & Goodhart, 1982). Patterns of viewer availability explain why television viewing levels are stable for days of the week and times of the day (Taneja et al., 2012; Webster & Phalen, 1997) regardless of changes in programming content. Furthermore, availability precedes other situational factors that influence patterns of audience duplication (Cooper, 1996). For example, viewer availability during repeat airings explains repeat viewing levels better than program or channel loyalty (Barwise et al., 1982; Webster & Wang, 1992). In addition, audiences with higher availability have larger channel repertoires (Heeter, 1985; Yuan & Webster; 2006).

Another important situational factor accounts for the fact that television viewing is frequently a social event. Family members and friends often watch television together because it facilitates interpersonal communication and provides opportunities to entertain guests and "contributes to structuring of the day" (Lull, 1980, p. 202). This act of coviewing transforms program choice from a decision driven by individual preferences into a "*socially negotiated choice*" (Bjur, 2009, p. 33, emphasis in original). Therefore, when watching television with a group, an individual may watch content that the group prefers even if it is not consistent with his or her needs (Webster & Wakshlag, 1983). In accordance

with this theory, Wonneberger et al. (2011) find that the presence of coviewers increases the likelihood of watching news programs, even for viewers otherwise uninterested in news.

The final set of situational determinants that we review in this section is access to different media forms and use of media platforms that afford nonlinear video (Webster, 2011). Most homes subscribe to a multichannel service either through cable (basic or premium) or satellite. These services have different costs for users. Viewers who pay more for television content or services are likely to watch more television on average (Cooper & Tang, 2009). Further, those who pay more for specific content are likely to spend more time watching those programs that they purchased (Webster, 1983).

Among nonlinear media, the Internet has been regarded as a medium with the capacity to displace viewers from television. This is because viewers often have limited availability for consuming media (Webster, Phalen, & Lichty 2006), and the Internet fulfills many of the same needs and gratifications as television (Ferguson & Perse, 2000). An alternative proposition is that newer media provide users more opportunities to consume their preferred content, thus complementing rather than competing with traditional media (Dutta-Berghman, 2004). Studies continue to find conflicting evidence on how Internet consumption impacts traditional media use because they often rely on self-reports of each medium's use or do not contain passive measures of cross-platform use obtained from the same set of respondents. Similar to Internet use, watching content on digital video recorders (DVRs) may lead to less viewing of live television, although a recent industry study observes that heavy users of DVRs also watch more television overall, thus mitigating this concern (Nielsen, 2013).

Recent studies on television viewing (e.g., Cooper & Tang, 2009; Wonneberger et al. 2011; Yuan & Ksiazek, 2011) as well as those examining media consumption across platforms (Taneja et al., 2012; Trilling and Schoenbach, 2013; Webster & Ksiazek, 2012) find that situational determinants explain media use even in the contemporary high-choice media environments. The enduring influence of situational determinants is often attributed to the role of habit in shaping and retaining viewing practices (Bjur, 2009; LaRose, 2010). Recent studies have found availability as the most salient factor in explaining time spent viewing entertainment (Taneja et al., 2012) as well as news (Wonneberger et al., 2011) among audiences that had access to multiple media.

An Integrated Model of Television Viewing

The preceding paragraphs suggest that both motivational and situational determinants influence television-viewing behavior. Situational determinants explain impressive proportions of variance in viewing patterns, yet fail to provide insights into the mechanisms responsible for these patterns. In contrast, studies that focus solely on individual demographics, needs, and preferences fail to take into account the influence of situational factors. Further, the latter are based on self-reports, which tend to enhance the role of individual factors. For example, Palmgreen and Rayburn (1979) found that U & G only partially explained television use, and they suggest that "external factors (like available delivery systems, work schedules and family circumstances) may play an overriding role" (p. 173).

Webster and Wakshlag (1983) proposed a formal theory of television program choice that integrated these dissimilar perspectives. Their model suggests that a viewer's traits, needs, and preferences for a type of program influence his decision to watch a certain program type. However, the viewer should be available and choose that program over competing programs. Moreover, the viewer's

companion(s) should not restrict him or her from watching that program. In other words, this framework suggests that individual needs and preferences are moderated by situational factors. Similar arguments for including "context" and "social factors" were posited by Wonneberger, Schnoebach, and Meurs (2009).

A couple of recent studies (Cooper & Tang, 2009; Wonneberger et al. 2011) have examined the influence of situational and individual determinants on time spent with television. However, Cooper and Tang focus on the main effects and do not examine the moderating effects that situational factors have on individual determinants. Also, they only explain television viewing as a whole and do not study the influence of individual and situational determinants with respect to different genres of television content. Wonneberger et al. (2011) do examine the interaction effects between situational and individual determinants; however, their study focuses solely on news viewing. Unlike these studies, we examine the interaction effects between individual and situational determinants for three different types of television genres: entertainment, news, and sports. As we explain later, our data also enables us to use an improved measure of audience availability.

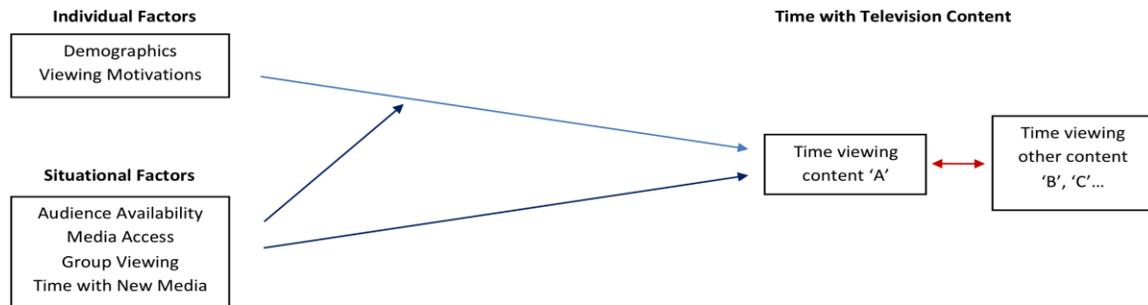
Consistent with Webster and Wakshlag (1983), we posit that time spent with a particular television genre is influenced by the interaction of situational and individual determinants. Among situational determinants, we are especially interested in the role of audience availability and group viewing. We posit that higher availability results in watching more television because a more available viewer is more likely to watch a wider variety of programs, possibly even genres that he may otherwise not prefer. For instance, older viewers may be exposed to a television genre toward which they are not predisposed simply because they spend a lot of time at home. In such cases, individual factors such as demographics or viewing motivations alone cannot explain viewing behavior. In contrast, individuals who have limited availability are more likely to be selective in what they watch. In other words, as the availability of an individual increases, the role of viewing motivations and individual demographics in explaining exposure to each television genre will decrease. This leads to our first hypothesis:

H1: An increase in availability reduces the influence of individual factors such as motivations and demographics on television viewing for each genre, namely entertainment, news, and sports.

Similarly, when people watch television with a group, we suggest that they are more likely to watch content that the group prefers, rather than what they would watch on their own. For instance, men may watch soap operas during prime time, as this is a time when the family often watches TV together. In such instances of group viewing, demographics and motivations alone will be insufficient in explaining television content usage. Therefore, we expect that the role of individual factors in explaining time spent with television content will be reduced when a person spends more time watching television in a group. This leads to our second hypothesis:

H2: An increase in group viewing time reduces the influence of individual demographics and motivations on television viewing for each genre, namely entertainment, news, and sports.

Figure 1 summarizes our theoretical framework. Here, it is important to note that in addition to the main and interaction effects of individual and situational determinants, we also account for how time spent with one genre of television content affects time spent with another. In the following section, we describe our methodology, including our data, and how we operationalize each of the individual and situational determinants that we include in our estimation.



- We evaluate a range of interaction effects between and within individual and situational factors in the study

Figure 1. An integrated model of television viewing.

Research Design

Data

We utilize data from the video consumer mapping (VCM) study commissioned by the Council for Research Excellence (CRE), a body of research professionals from broadcasting and advertising. Funded by Nielsen, they conduct research to advance industry-wide understanding of audience behavior.

These data were collected in 2008 by observing a sample of U.S. adults, who were former panelists of the Nielsen television Peoplemeter panel. A total of 495 subjects across six geographically dispersed designated market areas (DMAs) were observed. The subjects ranged in age from 18 years to 95 years (mean 46 years, SD 16). The sample consisted of 53% females and 47% males. A total of 70% were employed full time or part time; 50% had at minimum a college degree, while another 45% listed high school as their highest educational attainment. A total of 87% subscribed to cable or satellite television, and 85% had home Internet access.

Each subject was observed for a full waking day. Throughout the day, at intervals of 10 seconds, observers recorded the subjects' location, activities being performed, and media consumption. If the subject used two or more media platforms simultaneously, the observer recorded each platform's usage separately. If media was consumed simultaneously while performing another activity, for instance listening to the radio while cooking, the other activity was noted in addition to media consumption. The observers also followed subjects to work, friends' houses, shopping malls, or any other location to which they traveled. The observations were logged on a handheld device. To avoid observer fatigue, observers worked 8 hour shifts. Typically, an entire waking day for each subject could be observed with two shifts.

Additionally, these respondents were surveyed by telephone as well as face-to-face to obtain information on their sociodemographic profiles and motivations for consuming media. A detailed inventory of all devices owned and services subscribed to was recorded for each subject's household. These data

enabled us to integrate both situational and individual determinants of television viewing without compromising on methodological considerations for either perspective.

The method raises concerns about Hawthorne effects, which we address in the concluding section.

Operationalization

Although the VCM data measured media use both inside and outside the home, we consider only in-home consumption in this study and discard observations relating to media use that took place outside the home. A measure of availability is hard to construct for out-of-home consumption as the data do not allow us to determine whether the observed individual had access to a television when outside the home, an important component of the definition of availability. In other words, for out-of-home viewing, we have to infer access and availability based on viewing alone. In doing so, one could ignore instances where the subject had access (i.e., was available) but did not watch. This could make the measure of availability less reliable, as we explain in the following section.

Dependent Variable. *Time spent viewing television genres:* CRE data provide separate estimates for viewership of live television and time-shifted television (viewed through DVRs). For each individual, we aggregated time spent over the duration of the day viewing live television for each of the three genres: entertainment, news, and sports. Subjects spent an average of 263 minutes each day watching live television. While 200 minutes were spent watching these three genres (see Table 1), the remaining 63 minutes constituted either commercial time, random channel surfing, or instances in which the television was on but the observer could not ascertain the content genre being consumed. Observers did not note the individual programs consumed within each genre.

Table 1. Descriptive Statistics of Television Viewing.

Variable	Mean (minutes)	Std. Dev.	Min	Max
Time at Home (Availability)	641.5	249.0	9.8	1253.3
Time Viewing Television at Home	263.0	236.0	0	1139.3
Time Viewing Entertainment	128.4	143.9	0	1111.7
Time Viewing News	47.03	66.0	0	419.3
Time Viewing Sports	27.9	74.2	0	640.2
Group Viewing	84.9	120.2	0	711.7
Time on Internet	60.0	100.2	0	861.5
Time with Nonlinear Video	36.5	82.2	0	733.2

Situational Determinants. *Audience availability:* Previous studies have operationalized availability as persons using television (PUT), households using television (HUT) (Webster, Phalen, & Lichty, 2006), or time spent viewing (TSV) (Wonneberger et al., 2011). These measures do not consider the time when viewers may be available but did not watch television. Hence, such measures overstate the effects of audience availability. For instance, Pinigree et al. (2001) found that on certain evenings, fewer college students watched television than on other evenings, despite similar levels of availability among students. Thus not all available viewers may watch television in their free time, especially considering that such viewers enjoy increased access to newer media (Cooper & Tang, 2009) that can fulfill similar needs (Ferguson & Perse, 2000).

Similarly, obtaining availability through surveys (e.g., Cooper & Tang, 2009) can also be inaccurate, as overstating of media use could overemphasize the role of availability (Prior, 2009). Therefore, to successfully integrate these two perspectives, studies need to obtain media use through passive measures, *and* should contain a measure of availability that isn't restricted to TSV.

In this study, we operationalize audience availability as the time spent at home during waking hours (as measured during observation). This is a better measure than TSV as the latter overstates the importance of availability. This includes all the time during the observation period a respondent was present at home, irrespective of whether he or she was watching television, using any other platform, or even doing something completely unrelated to media use (e.g., cooking). This operationalization is similar to the one by Taneja et al. (2012), in which audience availability at work, at home, and while commuting was computed as total time spent on corresponding locations, measured through direct observation.

Group Viewing: Observers noted if television was being viewed alone or in the presence of another person. Thus we estimated *Group Viewing* as the total time spent viewing linear television in the presence of at least one other person (see Table 1). We excluded group viewing of nonlinear television or online video from this estimate.

New Media Platforms: We computed two variables to measure the impact of newer media. The first, *Time on Internet*, was obtained by totaling all manner of online consumption that occurred while the subject was at home. This includes e-mail, instant messaging, online search, streaming videos, and accessing news and sports websites. Sometimes, multiple applications were used simultaneously (e.g., e-mail, instant messenger, and a news website), and these were counted as a single instance to ensure time spent on the Internet was not inflated. The second measure, *Time with Nonlinear Video*, was computed by totaling all manner of nonlinear video being watched on the television screen through DVDs, CDs, or DVRs (and in rare cases a video game being played via a console). Table 1 reports the descriptive statistics for these measures.

Media Access: We included multiple measures of media access. *No Cable*, *Premium Cable*, and *Satellite* were included as dummies to indicate a noncable household, a home with premium cable, and a home with satellite television, respectively. Households having basic cable service were used as the reference category.

Individual Determinants. *Viewing Motivations:* Viewers were asked to rate their agreement with 14 statements using a 7-point scale to gauge their motivations to watch television based on the U & G theory. We factor analyzed these statements and found that they aligned well with three broad types of

viewing motivations reported in the literature. We label these as needs for "(social) interaction," "relaxation," and "information," respectively. In Table 2, we list the 14 statements and how they load on these factors, along with their reliabilities. These factors correspond well to motivations used in earlier studies (e.g., Papacharissi & Mendelson, 2011). We computed the score of each factor that we include in the model by taking the simple average of all statements that loaded on each particular dimension.

Table 2. Viewing Motivations Derived from Factor Analysis.

Statement	Factor Loadings*		
	Interaction ($\alpha = .72$)	Relaxation ($\alpha = .80$)	Information ($\alpha = .75$)
To find something in common with others	0.817		
To connect with friends, family or others	0.782		
It's cool	0.66		
I trust it	0.655		
It puts me in control	0.652		
I feel completely immersed in the experience it gives me	0.578		
To feel that I am staying on the cutting edge of things	0.573		0.446
To be entertained		0.750	
It helps me unwind		0.737	
It's fun		0.735	
To pass the time		0.732	
To keep up with what's going on in the world			0.793
To satisfy my curiosity about something			0.773
It offers me things that are personally relevant to me			0.712

*Factor loadings less than 0.4 are suppressed

Viewer Demographics: As measures of individual demographics, we included age, gender (operationalized as a dummy with male =1), employment (dummy for someone in a full-time or part-time job, coded as working =1), education, and income. Education was coded from 1 to 4 in order of high school graduates, those who went to college but did not graduate, college graduates, and those who had professional or advanced degrees. Income levels were also coded 1 to 4, with 1 representing the lowest income group and 4 representing the highest.

We report the correlation between all the predictor variables in Table 3.

Table 3. Correlation Matrix.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Time at Home*	1														
2. Group Viewing*	0.235	1													
3. Noncable Homes	0.000	-0.087	1												
4. Satellite	0.015	0.027	-0.195	1											
5. Premium Cable	0.015	0.079	0.019	-0.120	1										
6. Time with Nonlinear Video*	0.215	0.232	-0.088	0.108	0.058	1									
7. Time on Internet *	0.156	0.0461	0.026	0.048	-0.019	0.217	1								
8. Gender	-0.061	-0.066	-0.037	0.071	-0.041	0.055	-0.013	1							
9. Age	0.017	-0.161	-0.036	-0.031	-0.021	-0.127	0.012	-0.085	1						
10. Employment	-0.010	0.099	0.010	0.105	-0.004	0.086	0.067	0.165	-0.486	1					
11. Income	0.004	0.088	0.039	0.052	-0.043	0.084	0.015	0.002	-0.050	0.009	1				
12. Education	-0.153	-0.052	-0.062	-0.073	0.022	0.061	0.314	0.075	0.093	0.045	0.006	1			
13. Social Interaction Need	0.106	0.116	0.000	0.001	0.120	-0.048	-0.132	-0.024	-0.076	-0.003	-0.002	-0.199	1		
14. Entertainment Need	-0.009	0.145	-0.055	0.062	0.179	0.044	-0.060	-0.039	-0.169	0.081	0.003	-0.075	0.472	1	
15. Information Need	0.079	0.041	-0.089	0.025	0.099	-0.117	-0.066	-0.058	0.098	-0.029	0.026	-0.055	0.594	0.379	1

*All time variables are logged

Estimation Methodology

Our theoretical framework can be expressed in mathematical form as follows:

$$\text{Time spent viewing genre } C = f(\text{Time spent watching genre } C', X_{i,C}) \quad (1)$$

In equation (1) C' refers to television genres other than genre C , and X is a set of explanatory variables that includes the intercept, main effects of individual and situational determinants, and interaction effects that influence viewing of genre C for individual i .

We focus on entertainment, news, and sports because subjects in our data (described in the next section) spend an average of 74% of their television time viewing these three types of content (see Table 1). During the remaining 26% of time, they either watch commercials or surf channels. Equation (1), when applied to these three genres, takes the following form:



Findings

Model Diagnostics

As already noted, our model accounts for how time spent on a particular genre (e.g., entertainment) influences the time spent on another genre (e.g., sports). We conducted the Durbin-Wu-Hausman test to confirm the presence of simultaneity between different types of content. The null hypothesis of this test is that the estimates of the model without simultaneity are consistent. Failure to reject the null hypothesis suggests that it is not necessary to estimate a model with simultaneous effects. Results from the test significantly reject the null hypothesis ($\chi^2 = 69.48, p < 0.00$) and confirm the presence of simultaneity.

It is also possible that the error terms in the system of equations are correlated with the explanatory variables, thus resulting in endogeneity. We therefore conducted the Durbin-Wu-Hausman (DWH) test suggested by Davidson and MacKinnon (1993) to check for such effects. The results from the test reveal that endogeneity is not present in the model and, hence, we do not need to use instrumental variables (i.e., 3SLS) for the estimation. A seemingly unrelated equations approach is sufficient to estimate this model.

We introduced variables into the model in a step-wise manner to ensure there are no multicollinearity issues. We also checked for interaction effects between and within different individual and situational determinants. We do not report in the results interactions that were insignificant or those that did little to improve model fit. The full results are presented in Table 4, and we report the key findings below.

Table 4. Results from Estimation.

Explanatory Variables	Entertainment		News	Sports		
	B	S.E	β	S.E.	β	S.E
Simultaneity Effects						
Log (time with news)	0.31**	0.04	----	----	0.05	0.05
Log (Time with Entertainment)	----	----	0.44**	0.06	0.11*	0.05
Log (Time with Sports)	-0.09*	0.05	0.06	0.05	----	----
Individual Characteristics						
Gender (Male = 1, Female = 0)	-0.20	2.16	2.46	2.56	1.51	2.42
Age	-0.17*	0.07	0.17*	0.09	-0.01	0.08
Working	-0.09	0.20	-0.02	0.23	0.15	0.22
Income	0.00	0.01	0.00	0.01	0.01	0.01
Education	-0.38**	0.10	0.14	0.12	0.17	0.12
(Social) Interaction Need	-0.56	0.85	-0.05	1.00	-1.29	0.94
Relaxation Need	-0.64	1.05	2.47*	1.23	-2.24*	1.16
Information Need	0.20	0.94	-0.25	1.11	1.69	1.05
Interaction Need* Male	-0.16	0.14	0.40*	0.17	0.20	0.16
Relaxation Need* Male	0.34*	0.16	-0.42**	0.19	-0.17	0.18
Information Need* Male	0.20	0.15	-0.38*	0.17	0.03	0.16
Situational Effects						
Availability (Log (Time at Home))	-0.56	1.03	3.01*	1.21	-1.13	1.15
Availability*Male	-0.46	0.32	0.1	0.38	-0.18	0.36
Availability*Age	0.02*	0.01	-0.02*	0.01	0.00	0.01
Availability*Interaction Need	0.08	0.13	0.00	0.16	0.18	0.15

Availability*Relaxation Need	0.15	0.16	-0.41*	0.19	0.38*	0.18
Availability*Information Need	-0.05	0.15	0.11	0.18	-0.24	0.17
Group Viewing (Log [Group Viewing Time])	0.09	0.24	0.46	0.29	0.91**	0.27
Group Viewing *Male	0.18*	0.07	-0.09	0.09	0.07	0.08
Group Viewing *Age	0.00	0.00	0.00	0.00	0.00	0.00
Group Viewing *Interaction Need	0.03	0.03	-0.06	0.04	0.03	0.04
Group Viewing *Relaxation Need	-0.01	0.04	-0.01	0.04	-0.08*	0.04
Group Viewing *Information Need	-0.04	0.04	0.01	0.04	-0.10*	0.04
No Cable	-0.13	0.25	0.11	0.30	0.07	0.28
Premium Cable	0.23	0.19	0.30	0.22	0.69**	0.21
Satellite	-0.29	0.20	-0.18	0.23	-0.22	0.22
Log (Time on Internet)	-0.09	0.04	-0.04	0.05	-0.05	0.05
Log (Time with Nonlinear Video)	-0.09**	0.04	-0.11*	0.05	-0.04	0.05
Intercept	7.40	6.52	-21.27*	7.67	5.84	7.29
R Square, N	0.43	381	0.22	381	0.19	381
Chi square	342.6**		163.18**		92.69**	

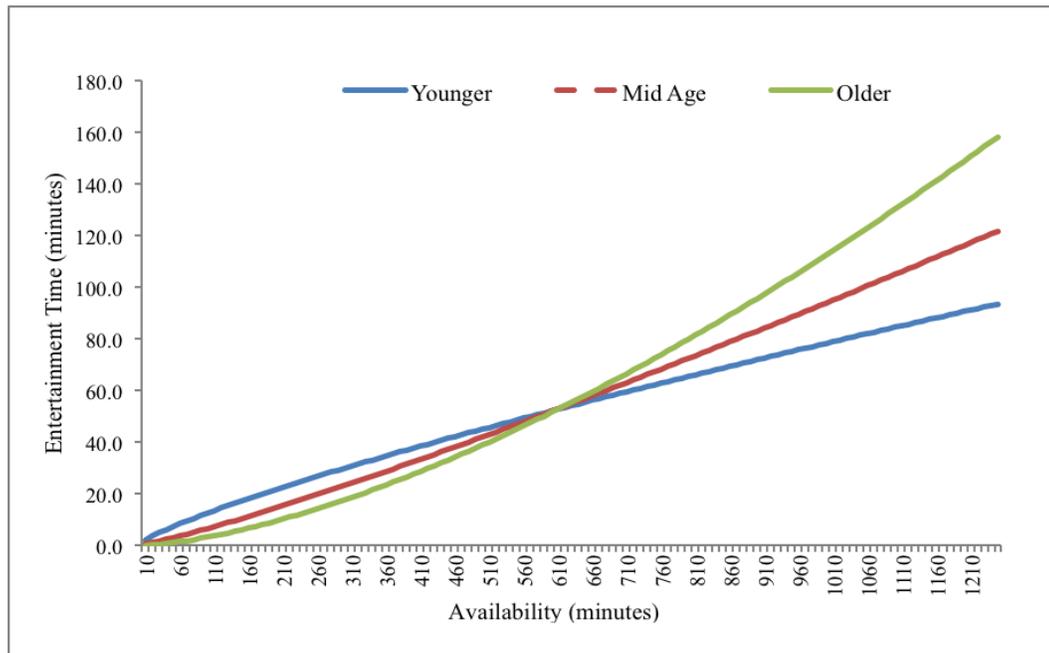
* $p < 0.1$; ** $p < 0.01$

Results

We began by examining how time spent on a certain genre is influenced by time spent on other genres. We found that time spent on entertainment had a positive effect on time spent on news, and vice versa. Therefore, viewers who watch more entertainment programs are also likely to watch more news. Conversely, time spent on sports had a detrimental effect on time spent on entertainment, and vice versa. Therefore, individuals seem to use entertainment programming and sports as substitutes.

When examining the variables that significantly affect time spent with entertainment, we found that individuals with higher levels of education watched less entertainment, while the main effects of employment levels and income were insignificant. Time spent on nonlinear media had a significant negative effect on time spent watching entertainment on linear television. This suggests that individuals

use nonlinear media and entertainment television as substitutes. This is an interesting result, the implications of which appear in the discussion section.



Age was varied by 1 standard deviation from the mean ("mid age") to get "younger" and "older."

Figure 2. Influence of availability on entertainment viewing time by age.

The interaction effects also revealed important conditions that affect time spent watching entertainment. While age had a significant negative main effect on time spent on entertainment television, this effect was moderated by audience availability. With increasing availability, time spent watching entertainment for older individuals increased at a faster rate than time spent for younger individuals (see Figure 2). With increasing group viewing time, time spent watching entertainment for males increased at a faster rate than time spent for females (see Figure 3). Since availability and group viewing moderate the effect of individual determinants such as age and gender, respectively, H1 and H2 are supported for entertainment.

When examining the results for variables that affect time spent with news, we found that time spent on nonlinear media again had a significant negative relationship with time spent watching news on the television. Therefore, individuals seem to spend more time with nonlinear media at the expense of viewing the news on television. The main effects of employment level, income, and education were insignificant.

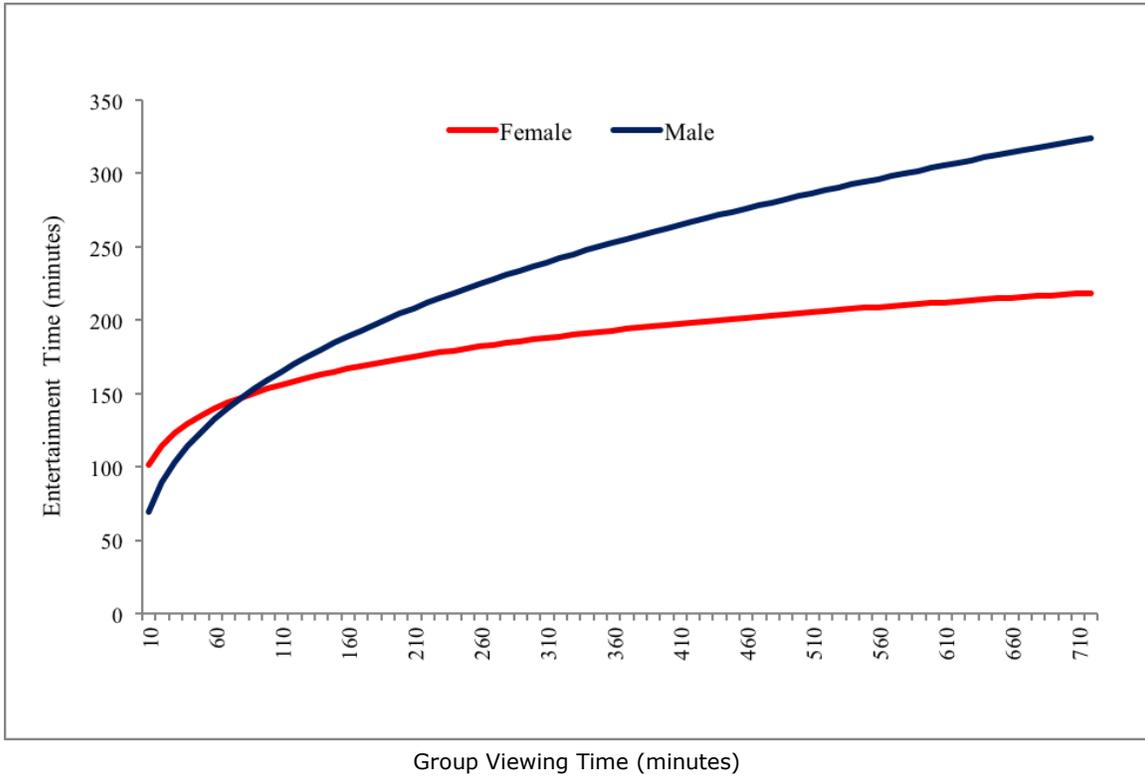
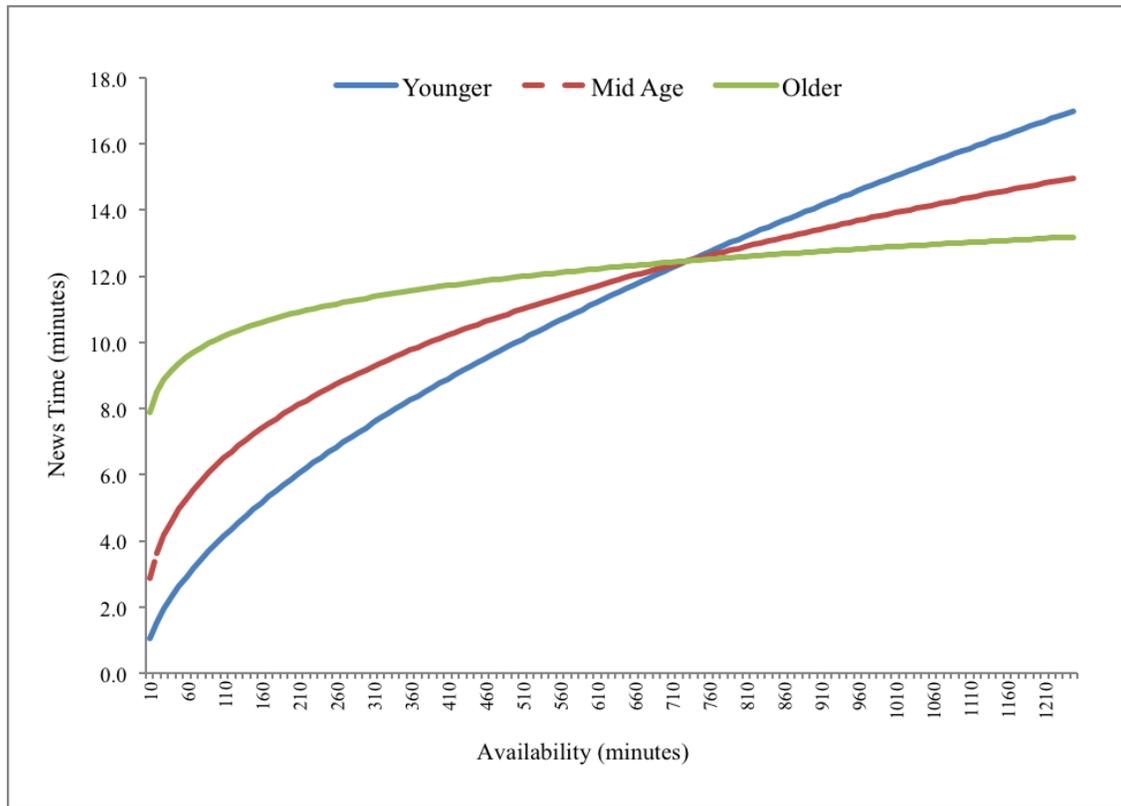


Figure 3. Influence of group viewing time on entertainment viewing time by gender.

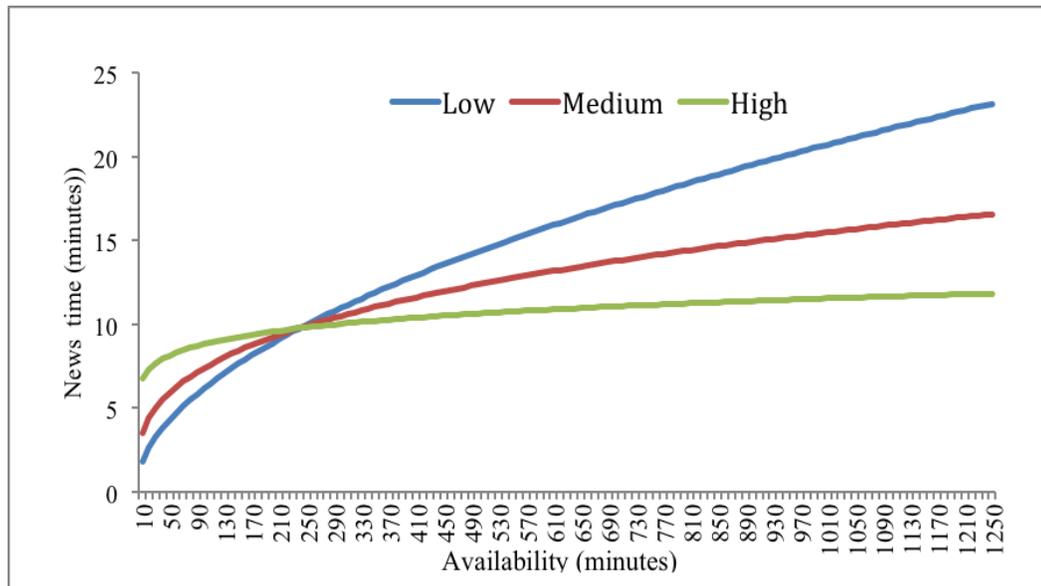


Age was varied by 1 standard deviation from the mean ("mid age") to get "younger" and "older."

Figure 4. Influence of availability on news viewing time by age.

Age had a significant positive main effect on time spent watching news. However, this effect was moderated by audience availability. Figure 4 suggests that with low levels of availability, older individuals spend more time watching news than younger individuals. However, with increasing availability, time spent viewing news for younger individuals increased at a faster rate than news viewing time for older individuals.

Viewing motivations also influenced time spent watching news. When examining the need for relaxation, the main effect on time spent on news was positive, meaning that individuals with a high need for relaxation watched more news. However, this effect was moderated by audience availability. With increasing availability, news viewing time for individuals who had a low need for relaxation increased at a faster rate than for those with a high need for relaxation (see Figure 5). Therefore, H1 was supported with respect to viewing of the news. However, the main and interaction effects for group viewing were not significant for news, and thus in this instance H2 was not supported.

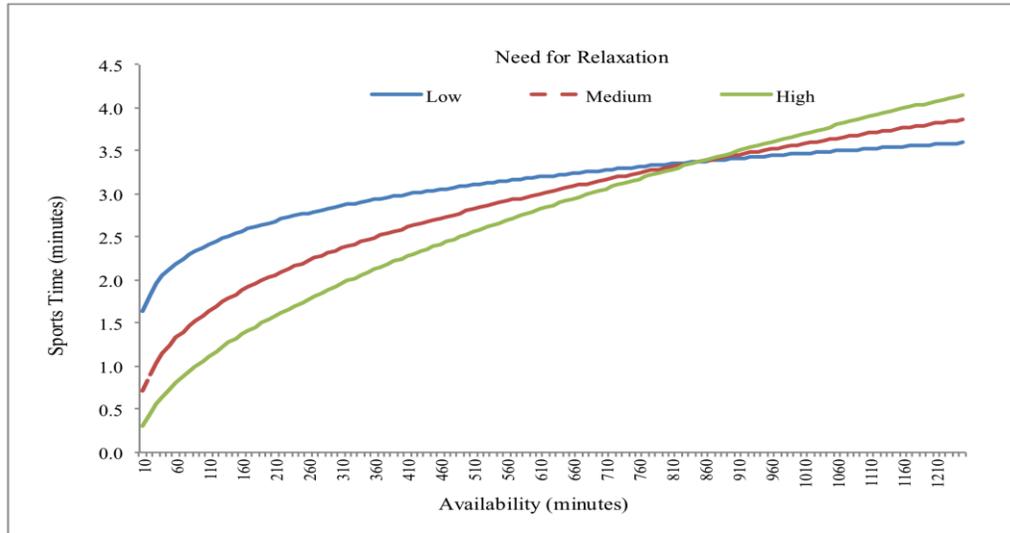


Need for relaxation was varied by 0.5 standard deviations from the mean ("medium") to get "low" and "high."

Figure 5. Influence of availability on news viewing time by need for relaxation.

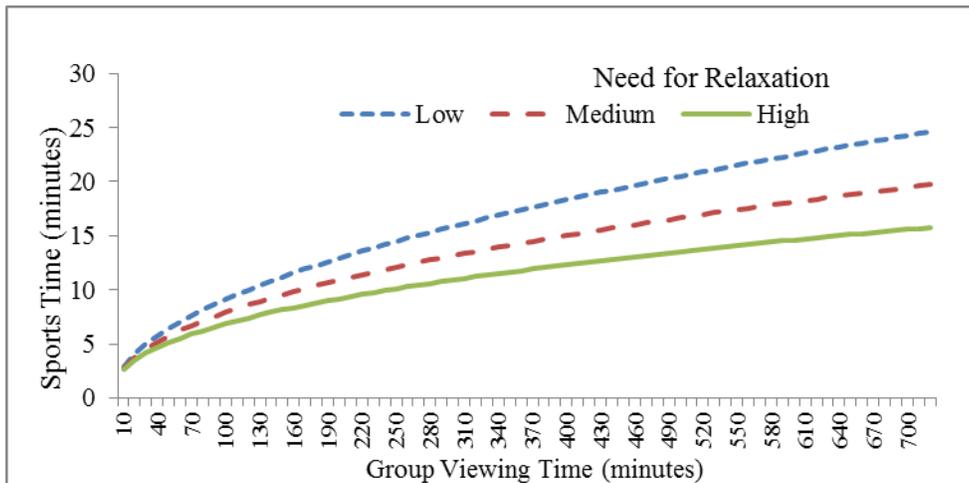
In explaining time spent watching sports, the coefficients for access to premium cable and group viewing time were positive and significant. Need for relaxation had a negative significant main effect on time spent watching sports—that is, individuals with a high need for relaxation watched less sports than those with a low need for relaxation. However increasing availability moderated this effect. With increasing availability, sports viewing time for individuals with a high need for relaxation increased at a faster rate than for those with a low need for relaxation (see Figure 6), thus lending support to H1 for sports.

The interaction effects of group viewing time with need for relaxation was significant, but not as hypothesized in H2. For example, with increasing group viewing time, sports viewing time for individuals with low relaxation needs increased at a faster rate than for those with high relaxation needs (see Figure 7). Therefore, instead of moderating or diminishing the main effect of need for relaxation, group viewing time enhanced the effect of this viewing motivation on sports viewing time. H2 is hence not supported for sports. Likewise, looking at the interaction effect of group viewing time and need for information, we found that sports viewing time for individuals with low information needs increased at a faster rate than for those with high information needs (see Figure 8).



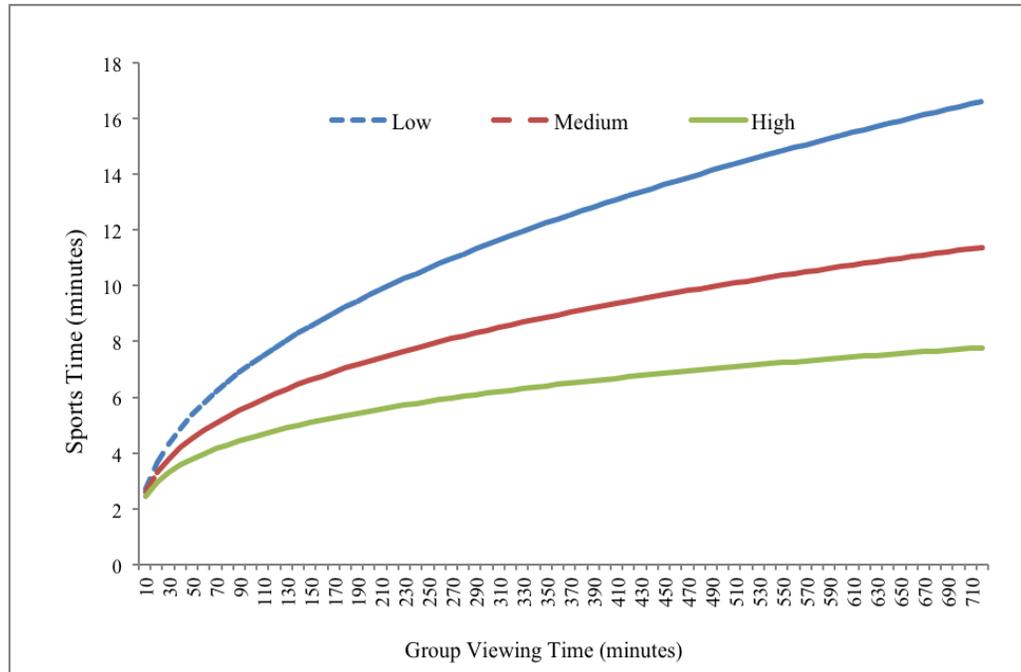
Need for relaxation was varied by 0.5 standard deviation from the mean ("medium") to get "low" and "high."

Figure 6. Influence of availability on sports viewing time by need for relaxation.



Need for relaxation was varied by 0.5 standard deviation from the mean ("medium") to get "low" and "high."

Figure 7. Influence of group viewing time on sports viewing time by need for relaxation.



Need for information was varied by 0.5 standard deviation from the mean ("medium") to obtain "low" and "high."

Figure 8. Influence of group viewing time on sports viewing time by need for information.

Discussion

This study aims to further the understanding of factors that explain exposure to different content genres on television, especially when audiences have access to multiple platforms. The theoretical framework integrates a range of situational and individual factors and examines the interactions between them to explain time spent on three commonly watched genres. While existing studies on television use have either examined overall exposure to the medium (e.g., Cooper & Tang, 2009) or have focused on a particular content genre or program (e.g., Wonneberger et al., 2011), this study examines the use of three commonly viewed genres simultaneously.

The results broadly suggest that the effects of individual characteristics and needs such as age, education, and viewing motivations on time spent with any of the television genres are moderated by situational factors such as audience availability and group viewing. Therefore, even in a multiplatform, high-choice media environment, situational factors remain pertinent. Despite the autonomy that audiences enjoy today (Napoli, 2011), we find that exposure continues to be explained by routinized consumption of

television (Rosenstein & Grant, 1997) guided by both patterns of availability as well as the practice of watching television in a group. We discuss each in turn.

First, we found that as audience availability increases (i.e., people spend more time at home), their individual traits and motivations matter less in determining exposure to content. This result holds for all three genres that we model. Therefore, studies that consider either individual or situational factors, or just their main effects, are inadequate. For instance, if we were to observe only the main effect of age, we would conclude that with increasing age people watch more news and less entertainment. However, increasing availability bridges the differences in entertainment and news viewing times between older and younger individuals. This is perhaps because with increasing availability, individuals watch more television overall, and consequently their time with both news and entertainment increases. This is consistent with the simultaneity effects, which suggest that news and entertainment are complementary genres. Similarly, we found that viewers who have a high need for relaxation—and are therefore not likely to watch sports—would watch more sports if they had more time available.

To summarize, audience availability significantly moderates the role of other individual factors such as age and viewing needs. We had posited this hypothesis as we expected higher availability to result in higher exposure to all kinds of content, because viewers who are more available watch more television. Likewise, in our data, we found that availability is significantly correlated with total time spent viewing television, and hence viewers who are more available watch more of each genre than those who are less available. Therefore, availability remains a significant premise for viewing, as suggested by Webster and Wakshlag (1983).

Earlier in the article, we reiterated Cooper and Tang's (2009) claim that studies that consider time spent viewing television as a measure of audience availability tend to overstate its importance. To overcome this limitation, we operationalized availability as time spent at home (adapted from Taneja et al., 2012). Of course, mere presence does not indicate availability. However, in our data we found that subjects consume television in conjunction with other activities such as cooking, housework, listening to music, and taking care of other people. Therefore, it is difficult to evaluate when people were unavailable and hence, our measure includes all such times a person was at home and therefore available to watch television. As Cooper and Tang (2009) caution, we did not rely on self-reports to estimate availability. Rather we computed it from extremely granular observation data, thus alleviating concerns of construct validity.

We expected group viewing, like availability, to diminish the effects of individual factors. We found that our hypothesis was supported for entertainment, which is the most commonly watched of the three genres. Although males watch less entertainment than females when watching alone, they are likely to consume more entertainment when in a group. However, our hypothesis on group viewing is not supported for sports and news viewing. For example, we find that when in a group, sports viewing time increases even more for people already likely to watch more sports. This could be because unlike entertainment, where our results suggest that males join females in watching, viewing groups for sports likely consist of fans partaking in the event together. This is an important finding as it suggests that situational determinants such as group viewing can influence different types of genres in different ways. It would be interesting for future studies to examine specific motivations for individuals watching sports that our data do not capture, such as sense of belonging, routine, stimulation, and self-esteem, as well as the

pleasure of following favorite teams and the uncertainty of sports, among other motivations, as found in prior studies (e.g., Gantz & Wenner, 1995; Sloan 1989; Wann 1995). These motivations can help discern fans from nonfans and, consequently, help evaluate whether group viewing moderates viewing motivations of nonfans as hypothesized.

We found no significant evidence to suggest that as viewers watch more television with others, they watch more or less news than they would when watching alone. This result is not consistent with the findings of Wonneberger et al., (2011). We can attribute this inconsistency to two factors. First, their study uses the average number of coviewers as a measure of group viewing as opposed to the group viewing time metric that we use. Second, the average number of television sets in a U.S. household is 2.8, while it is only 1.3 in the Netherlands. Consequently, unlike a Dutch viewer, an American viewer who is not interested in the news has the option to switch to another television when others in the household are watching news. In summary, it seems that in the United States, viewing in a group has no effect on time spent watching television news.

Another interesting finding in this study is the complementary relationship between entertainment and news. Prior (2005, 2007) suggested that a high-choice media environment makes it much easier for people to find their preferred media content, unlike the era of only three networks, when everyone had to watch news at the same time. Such an abundance of choice can divide the population into news seekers and news avoiders (Ksiazek, Malthouse, & Webster, 2010). On the contrary, we found that watching news was positively related to watching more entertainment overall. This is consistent with the results from Wonneberger et al. (2011) who found that news programs often benefit from strong lead-in or lead-out effects of entertainment programs scheduled immediately before or after (Webster, 2006). Thus, even in a high-choice media environment, many situational factors cause people otherwise uninterested in news to consume at least some amount of television news.

There has been much debate regarding the extent to which the Internet and other new media act as substitutes or complements to linear television viewing. However, most of these studies (e.g., Ferguson & Perse, 2000) suffer from the analytical limitation of being unable to measure usage across platforms from the same respondents through passive measurement techniques. Our data enabled us to look at the impact of two newer media platforms, the Internet (as accessed on a computer screen) and nonlinear Video (such as DVRs and DVDs), which can be viewed on the television screen. We found that time spent with the latter negatively impacted time spent with television, specifically for entertainment and news content, although not for sports. This result is highly plausible since DVDs and DVRs are also watched on the television screen, thus forcing substitution of linear television viewing. Future studies can examine whether the substitution effect is due to time displacement or, alternatively, functional displacement (e.g., De Waal & Shoenbach, 2010; Ferguson & Perse, 2000; Kayany & Yelsma, 2000). In this study, we were unable to examine this result further because we did not have information on the content being watched when using nonlinear video. Sporting events, in contrast to news and entertainment, are best enjoyed live and it is unlikely that people would watch sporting events on time-shifted television.

Although our study makes significant progress in explaining simultaneous consumption of three television genres, it does have its limitations. For example, it would be useful if we had information on individual programs watched rather than just the content genres that people were consuming. Having such data would enable us to incorporate scheduling factors as additional predictors into our model. Also,

while we have information on whether people were watching television alone or in a group, richer information on the composition of viewing groups would be desirable. Another potential limitation in the current data is that each person was observed only for one day. Having data from a longer duration of time would lend greater external validity to the findings. However this concern is somewhat mitigated as all respondents were not observed on the same day and the sample had observations from all days of the week, including weekends.

Another cause for concern is the Hawthorne effect, which is the tendency of subjects to alter their behavior due to the attention they receive from the experimenter. The CRE understood the effects of surveillance and took several steps to alleviate its effects. First, the subjects chosen were former Nielsen Peoplemeter panelists, and hence were acclimatized to monitoring. Second, observers were instructed to avoid any interaction with the subjects, thus reducing or eliminating the observer-expectancy effect. It is also important to note that observers had to record data at 10-second intervals, which ensured that there was no time available for subject interaction. Third, unlike the Hawthorne plant study, subjects did not have any future incentives or risks to alter their media behavior one way or the other. Finally, observers recorded only platforms and content genres, not the specific content being watched.

Despite the precautions taken in sampling, observer training, and data collection, it is conceivable that a few subjects did alter their behavior. However, unlike the Hawthorne experiment, which focused on one or two teams, a much larger pool of subjects was observed in this study. Indeed, we have sufficient variance in the media and task activities carried out by this sample, thus reducing the influence any systematic behavioral change by a few subjects would have on the results. Further, the CRE reported that these data were not significantly different from those routinely reported by Nielsen. Finally, there are many studies that suggest the original Hawthorne findings are a methodological artifact (e.g., Jones, 1992), and others argue that such concerns should not dissuade participant observation and other experimental research in the social sciences (Falk & Heckman, 2009).

Despite these limitations, our study makes important theoretical and methodological contributions to the literature on media choice. We demonstrate that in a high choice, high autonomy media environment, linear television viewing continues to be a pastime significantly related to people's presence at home. While individual traits and viewing needs are important, situational factors such as availability and whether individuals watch television alone or in a group influence the genre they eventually watch. As media platforms expand and delivery technologies evolve (which they have somewhat since our data were collected in 2008), it is possible that the relative roles of these factors may shift. However, our study underscores that situational factors continue to be important and must be incorporated along with individual traits when studying media use, even in the new media environment.

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