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Tablet computers and traditional television (TV) viewing: Is the iPad replacing TV?

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Abstract
Over the past 3 years, tablet computers have become increasingly popular devices. In particular, Apple's iPad and its accompanying apps have taken the tablet market by storm. The technology enables users to accomplish a variety of tasks, including viewing television (TV) programs and other video sources on the device. Based on media uses and gratifications, an exploratory study examined whether the iPad was replacing traditional TV viewing. Results showed that, rather than displacing time with TV, the amount of TV viewing on an iPad was positively related to the amount of time watching traditional TV.

Keywords
iPad, tablet computers, television, uses and gratifications

In January 2010, Apple Inc. introduced its iPad tablet computer. At its unveiling, the company proclaimed the iPad 'a revolutionary device' (Apple, 2010a, para. 1). Although that statement was likely intended to characterize the iPad and its uses, the description turned out to be prophetic for the rapid diffusion of the product and its associated tools. On the first day the iPad became available to the public in April 2010, the company sold 300,000 of the devices (Apple, 2010b). During its 'fiscal 2011 third quarter' alone, Apple reported selling more than 9 million iPads (Apple, 2011b). Although Apple faces competitors in tablet technology, Nielsen reported that, as of 2011, more than 80% of tablets in use were iPads (Walsh, 2011).

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Coupled with the popularity of the device is the number of apps that are available for the iPad. According to a report in CNN Money (Elmer-Dewitt, 2011), by mid-2011 more than 100,000 apps had been 'written or adapted' for the device (para. 1). Additionally, Apple stated that as of July 2011, more than 15 billion apps for use on iPad, iPhone, and iPod Touch had been downloaded 'worldwide' from the company's app store (Apple, 2011a: para. 1).

National media organizations are beginning to capitalize on this technology through the development of their own apps. For example, Public Broadcasting Service (PBS) is providing videos from PBS Kids and PBS Kids Go via an iPad app (PBS introduces, 2011). Home Box Office (HBO) Go makes mobile content available anywhere to HBO subscribers (Corr, 2011). Entertainment and Sports Programming Network (ESPN) is available through an iPad app for subscribers through providers such as Time Warner Cable and Verizon (Worden, 2011). In July 2011, Cable News Network (CNN) announced that it was offering subscribers of several cable and satellite services a live stream of its programming through the CNN.com Web site and through apps for Apple portable devices (Reardon, 2011).

Local television (TV) stations also are using apps to provide news, weather, traffic reports, sports, and video any time of the day to a mobile audience (Whitney, 2011). Content providers, both locally and nationally, are still trying to determine which TV shows they will be able to offer and whether to provide services for free or on a subscription basis (Mossberg, 2011). For local stations, distributing their own content via apps is beneficial because there is less concern about legal issues associated with content distribution (State of the News Media, 2011), such as those faced by cable providers (Flint, 2011; Goetzl, 2011). Another benefit for TV stations is that apps may serve as an additional source of revenue (Whitney, 2011).

The diffusion of mobile computing technology, especially the iPad, has been phenomenal. More important, however, are the potential effects this device might have on the public's use of traditional media. Streaming video has been part of Web fare for more than a decade. Although smart phones are capable of receiving Internet video streams, one concern is a small screen size that may be a limiting factor in the amount of video an individual watches. That becomes less of a concern with the iPad because of its much larger screen. Given that factor and the increased availability of apps that permit viewing of TV programs and other videos, this study provides an exploratory analysis of the extent to which the iPad might be replacing traditional TV consumption. This topic is pertinent not only for media researchers but also for broadcasters, as TV content moves from purely traditional delivery via a TV set and Internet streaming to portable devices (Mossberg, 2011).

Tablet computing

The diffusion of new communication technologies is often associated with variables such as age, income, and education. For example, Ditta-Bergman (2004) observed that individuals who read news online tended to be younger, male, more educated, and had a higher income. In relation to the iPad, specifically, research by GfK MRI found that men were more likely than women to own the device (eMarketer, 2011a). Similarly, an iPad study by the Reynolds Journalism Institute at the University of Missouri–Columbia, Missouri, USA (Fidler, 2010), revealed that about 80% of respondents were male, more than 75% held a bachelor's degree, and slightly more than 50% had an annual 'household income of at least $100,000' (para. 2). According to comScore (2011) data, 27% of iPad users were aged 25–34, followed by slightly over 20% aged 35–44.

One crucial question for the communication industry in general and broadcasters in particular is the effect that the Internet and mobile devices are having on TV, especially as it relates to cable and satellite connections at home. Although 27% of subscribers to connected TV services watch video on a mobile device, only 3% indicated they had cut the cord (Friedman, 2011). An eMarketer (2011b) study found that 34% of people who own tablet computers spend more time with the device than with TV. Although Americans still prefer watching a TV set, a study by the Cable & Telecommunications Association for Marketing (2010) found that 26% of survey respondents watched TV shows and/or movies via the Internet. Furthermore, the study revealed that 6% watched on cell phones and 6% viewed video on portable devices.

On the other hand, tablet use might actually be overlapping with other media rather than a singular activity to the exclusion of other media. For example, a Nielsen study (Bergman, 2011) revealed that 30% of iPad users use the device while watching TV. That study also found that TV was the most prevalent activity while also using the iPad.

The iPad also appears to be changing Americans' use of computers. Nielsen research data indicated that 35% of people who own tablet computers spend less time on desktop computers (Walsh, 2011). Additionally, 32% of respondents noted that they spend less time on laptops.

Perhaps the biggest driving force behind the rapid diffusion of the iPad and other tablet computers is the wide range of apps that are available for the devices. For example, apps available for Apple devices offer users the ability to accomplish a seemingly unlimited number of tasks, including reading books; playing games; and accessing news, sports, and other information (Apple, 2011a).

How are tablet computer owners using these devices? According to the March 2011 AdMob research, entertainment is the number one target (eMarketer, 2011b: para 4). More than 80% of owners indicated they use the technology for playing games. However, 78% noted they used the tablet for 'searching for information'. Also, 8 in 10 respondents indicated they used their tablet computer at home versus on the go.

Tablet owners also appear to be interested in news and information about their communities. The AdMod study cited above found that 61% of tablet computer owners use the technology for 'reading the news' (eMarketer, 2011b: para 4). Research released by the Project for Excellence in Journalism (Rosenstiel et al., 2011) revealed that 47% of people who own a smartphone or tablet computer indicated they get 'at least some local news and information' on one of these types of devices (para 1). In addition, 13% of mobile users indicated they have an app through which they obtain news content.

A series of studies (Fidler, 2010, 2011) examined the relationship between iPad users and their consumption of news. In an earlier study, Fidler (2010) found that 'breaking news reports and current events' were the primary use of the technology for more than 80% of respondents (para 4). More than 70% of users who spent at least an hour reading news on their iPad indicated they were 'very likely' to use a newspaper's app to obtain news rather than read news on the Web site of the paper. An especially pertinent finding in relation to the present study is the statistically significant relationship between iPad use for news and reduced time spent reading the print version of a newspaper. In a follow-up study, Fidler (2011) found that reading news via apps from sources that compile news was the most likely activity for 51% of iPad users, followed by 41% who used an app to read a newspaper. More than a third of users accessed news 'once or twice a day' on the device. Seventeen percent of subscribers to print newspapers indicated it was very likely they would cancel their print subscription 'in the next 6 months'. However, the study also revealed that not all newspaper subscribers are ready to relinquish their print editions. Twenty-seven percent of respondents, who subscribed to a paper, indicated they were very unlikely to cancel their print subscriptions in the next half year.

Media gratifications and displacement

It has long been recognized that people are active in their selection of media types and content in order to fulfill certain needs, including those associated with information acquisition, connections to society or self, and even escape (Katz et al., 1974). The historical assumptions of uses and gratifications also posited that a particular medium possesses certain characteristics that help to satisfy a person's needs, so that the attributes of some media are more suited than others for fulfilling needs. The focus of that proposition is the differences between media types based on attributes. However, the inverse also may be true in that there are similarities between media so that a person's needs can be met equally well by one medium or the other (Katz et al., 1974).

The central issue of the present study is the extent to which there is an observable displacement of an existing medium by new technology. Research regarding the displacement of one medium by another can be traced to Schramm et al.'s (1961) study of a small Canadian town. The goal of the study was to determine the extent to which the introduction of TV reduced the amount of time spent with existing media, particularly children's use of media. Schramm and his colleagues found that TV seemed to displace the amount of time children spent with 'radio, movies, and comic books' but not 'newspapers, books, and magazines' (p. 19).

In the intervening years since Schramm et al.'s (1961) research, the results of several studies supported the notion that increased use of a new medium appeared to decrease the usage of another. For example, Henke and Donohue (1989) found that video cassette recorder (VCR) use was displacing time spent with TV, but it was dependent upon the uses of the VCR that were important to the individual. Ferguson et al. (2007) found that college students who spent more time listening to their iPod or other MP3 device spent less time listening to the radio.

Over the past two decades, the ubiquity of personal computers (PCs) and online communication has prompted researchers to consider the effects of new media on traditional communication. Of specific importance to the present study is prior research dealing with emerging technologies on TV viewing. Kayana and Yelsma (2000) studied the effects of online media use on traditional media and family communication. Although not statistically significant, there was some displacement of time spent with TV. They found that functional displacement was based on the type of content. The informational function of online media was displacing TV, but there were no significant differences for the entertainment function between TV and online media.

Ferguson and Perse (2000) sought to determine whether the Web served as a functional alternative to TV. They found that entertainment was a likely motivation for using the Web over TV. However, typical motivations for watching TV, such as passing time, relaxation, and companionship, were not associated with Web use. The researchers concluded that the Web is different 'functionally from television viewing' (p. 169).

Cai (2004) examined the relationship between college students' use of computers and traditional media. Students were asked to restrict their use of computers compared with other media. The reduced use of the computer for entertainment did not affect the time spent with other media. However, reduced time with TV was related to spending more time with other media, except the computer. Cai concluded that the findings of the study did not appear to follow the idea of functional equivalence between traditional and new media. However, that could be attributed to the computer having functions that are unique compared with other media.

More recently, Newell et al. (2008) argued that displacement can be either symmetrical or functional. Symmetrical displacement focuses on the correlation between time spent between media, so that increased usage of one is related to the decreased usage of another. On the other

hand, functional displacement is the action whereby the functions of one medium replace another. In that instance, the new medium is better able to fulfill a person's needs than the former medium. One example was TV replacing some of the traditional functions of radio during TV's early years (Newell, 2007).

In reality, there are a limited number of hours in a day that an individual can spend with a given medium. Given that fact, the approach of media research has often assumed what Kayana and Yelsma (2000) termed a 'zero-sum' relationship in which the introduction of a new medium takes the place of an existing one. Instead, Pilotta and Schultz (2005) argued that various media might be used simultaneously during 'intermittent activities of daily life' (p. 26). According to a study by Arbitron and Edison Research, people are spending 20% more time using electronic media than 10 years ago (Mindlin, 2011). That finding was partially attributed to the increased number of individuals who were online as well as the use of smartphones.

With that in mind, Newell et al. (2008) asked whether the issue concerns one medium replacing another or whether it is actually a matter of individuals using several media simultaneously. Compared with prior cross-sectional research, they examined the usage of multiple media in a longitudinal study that encompassed 4 years. During that time, they found an increase in total media use. Most important was their finding that there were no observed increases in time spent with one medium at the expense of another. Newell and colleagues suggested it is possible that new media are being incorporated into time spent with old media, since there was no significant increase or decrease in the usage of either types of communication.

In follow-up studies to Schramm et al.'s (1961) research cited earlier, Newell (2007) examined recent media use in the same Canadian town regarding media displacement. Newell found that, just as people did not relinquish the use of radio during the introduction of TV in the 1960s, they also did not substitute the Internet for TV in 2000. Newell argued that media use was more an issue of 'saturation than media displacement' (p. 10), since respondents had more access to multiple types of media. Rather than newer media replacing the older, media use was continuous and the usage, overall, had increased.

Dutta-Bergman (2004) examined news acquisition from the standpoint of media complementary theory. This approach compares usage (or nonusage) based on content rather than time spent with media. In the results of the study, individuals who used traditional broadcast and print media for information on a given topic also accessed that type of information online.

The notion that information gathering might not just be allocated to one form of communication also might relate to portable media, with mobile devices serving as one part of a larger media mix. For example, just over half of respondents in the Project in Excellence in Journalism study cited earlier in this article indicated that they get local news and information from multiple media platforms (Rosenstiel et al., 2011). Similarly, Fidler (2010) found that iPad users obtain news on a variety of platforms.

Channel repertoire

Given the iPad's potential similarities to TV, comparisons might also be made regarding the regular selection of content as compared to the types and quantities of channels that have been observed in prior research. Channel repertoire is defined as 'the number of available television channels that viewers choose to watch' (Ferguson and Perse, 1993: 31), thus highlighting the active nature of audiences in the process of media selection. Despite the number of available channels, individuals tend to select a set of channels that they regularly view (Heeter, 1985). Even satellite

TV viewers were found to have a repertoire of channels, despite the number of sources available to them (Lochte and Warren, 1989).

A number of factors may affect the number of channels viewed. Research regarding TV channel repertoire has shown that the selection of channels watched is based on routines (Heeter, 1985). Additionally, people with more leisure time were found to have a higher number of channels in their viewing repertoire (Ferguson and Melkote, 1997). Studies also have shown that a relationship exists between the types of channels viewed and demographic variables, such as gender and race (Neuendorf et al., 2001). Also, individuals who used a TV remote control had a higher channel repertoire than nonusers (Ferguson, 1992).

The concept of channel repertoire has also been extended from TV to examining a person's Web repertoire. Compared with the number of cable or even satellite channels, there are millions of potential sites a person might visit. To deal with that challenge, Ferguson and Perse (2000) used a list of the top 100 visited sites during the week of their study. As with earlier TV studies, respondents reported that they regularly visited an average of between four and five sites.

Based on the results of prior research about media displacement, the following questions are posed:

RQ1: What is the relationship between user demographics and viewing TV on an iPad?
RQ2a: Do iPad users have a repertoire of programs (and thus channels) that they regularly watch on their device? Is it related to satisfaction with watching TV on an iPad?
RQ2b: What is the relationship between channel repertoire, demographic variables, and time spent viewing TV programs on an iPad?
RQ3: What is the relationship between affinity for the iPad and time spent with the device for viewing TV programs?
RQ4: Is there a relationship between iPad usage motives, technological experience, and amount of time viewing TV on an iPad?
RQ5: What is the relationship between time spent viewing TV on an iPad, on a TV set, and on a computer?

Method

In August and September 2011, study participants were recruited to complete an online questionnaire about their use of the iPad to watch TV programs. Because of the requirement that respondents use their iPad in this fashion, several methods were used to disseminate survey invitations to potential respondents. This included posting survey invitations on the pages of various iPad groups on Facebook, other iPad forums, and Facebook friends of college students and other individuals. Invitations were also sent via e-mail to approximately 3100 undergraduate and graduate students at a small west coast university. More invitations were sent to 175 undergraduates at an east coast college. One hundred fifty-three people attempted to answer the survey, but not everyone finished all the items. In all, 87 respondents professed experience watching TV on an iPad and 73 of them answered most of the iPad TV motivation questions. Cohen (1988) estimated that a sample size of 64 is sufficient to detect medium- and large-sized effects.

Demographics

Of the 87 iPad users, there were 29 males (33.3%) and 58 females (66.7%). The ages ranged from 18 to 84 ($M = 28.81$, $SD = 15.68$, $n = 85$), with 53 respondents between 18 years and 22 years.

Respondents also indicated their completed education on a 7-point scale from high school to doctoral education ($M = 2.76$, $SD = 1.41$). Most respondents had either some college degree (51.7%) or a bachelor's degree (23.0%); 11.5% reported a high school degree and 3.4% had an associate's degree. Master's, professional, and doctoral degrees represented 5.7%, 2.3%, and 2.3%, respectively.

iPad and TV use

Respondents were asked a set of four questions that relate to time spent with various technologies: (1) the number of hours and minutes they watched a TV set yesterday; (2) the total number of hours and minutes they used their iPad yesterday for all activities; (3) the total hours and minutes they watched TV programs on their iPad yesterday; and (4) total hours and minutes they spent watching TV programs on a computer other than an iPad. TV time ranged from 0 min to 645 min ($M = 103.93$, $SD = 115.61$), total time spent with an iPad ranged from 0 min to 530 min ($M = 101.40$, $SD = 116.17$), time spent viewing TV on an iPad ranged from 0 min to 180 min ($M = 21.75$, $SD = 47.41$), and time spent viewing TV programs on a computer ranged from 0 min to 530 min ($M = 54.62$, $SD = 99.02$)

Next, respondents were asked to rate (on a 5-point scale) their level of expertise using an iPad (adapted from Ferguson and Perse, 2000). As indicated above, 87 people responded ($M = 3.34$, $SD = 1.17$).

Two sets of questions were adapted from Fidler (2011). First, based on a 5-point scale (from *not at all* to *a great deal*), respondents were asked about the extent to which they watch TV on an iPad at four different locations: home, school, work, and during transit (bus, car, etc.). Home use was highest ($M = 2.28$, $SD = 1.43$), with the remaining locations ranked as follows: transit ($M = 1.76$, $SD = 1.17$), school ($M = 1.55$, $SD = 1.00$), and work ($M = 1.28$, $SD = 0.75$). Second, respondents were asked to indicate on a 5-point scale (from *not at all* to *a great deal*) the extent to which they viewed TV on their iPad during specific day parts. The three most popular times were 7:30–11:00 p.m. ($M = 2.14$, $SD = 1.42$), 4:30–7:30 p.m. ($M = 1.89$, $SD = 1.16$), and 11:00 p.m.–1:00 a.m. ($M = 1.72$, $SD = 1.21$).

Two items, adapted from prior research (Palmgreen and Rayburn, 1985; Perse and Ferguson, 1993), asked respondents to rate their level of satisfaction in general with an iPad and with using the iPad to watch TV. Overall satisfaction ranged from 1 to 5 ($M = 4.09$, $SD = 1.03$, $n = 85$) and satisfaction with watching TV on the iPad had the same low-to-high range ($M = 2.95$, $SD = 1.25$, $n = 82$).

Respondents were then presented with two questions related to channel repertoire. First, they were asked to indicate how often they watched six different categories of TV programs on their iPad (adapted from Rubin, 1984), using a 5-point scale (*not at all* to *a great deal*): news ($M = 1.83$, $SD = 1.16$), sports ($M = 1.74$, $SD = 1.19$), movies ($M = 2.77$, $SD = 1.57$), scripted shows ($M = 2.33$, $SD = 1.44$), unscripted reality ($M = 1.56$, $SD = 0.94$), and talk ($M = 1.32$, $SD = 0.69$). Second, respondents were asked to list specific TV programs they viewed on their device (Heeter, 1985). These shows were tallied into a measure of different shows, or channel repertoire, which ranged from 0 to 6 ($M = 2.03$, $SD = 1.57$).

Research conducted by Nielsen (2011) found that, in June 2011, people in the United States who watched online videos, 'spent more time on average' using Netflix, followed by Hulu (para. 5). In addition, apps are available for users to watch video through these two sources on their iPad (Mossberg, 2011). According to the Nielsen study cited above, only 3% of Netflix viewers and 1%

of Hulu viewers use an iPad app to watch video from these sources. Given these factors, respondents were asked to indicate the frequency with which they used Netflix and Hulu apps on their iPad, using a 5-point scale ranging from *never* to *frequently*. Netflix ($M = 2.61$, $SD = 1.67$) scored higher than Hulu ($M = 1.46$, $SD = 1.04$).

Affinity

iPad use for TV represents a convergence of portable media, TV viewing, and online content. Drawing on prior research dealing with affinity toward TV and new communication technologies (Ferguson et al., 2007; Rubin, 1984), respondents were presented with 5 items and asked to rank their level of agreement toward the iPad on a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*). Responses were summed to create an affinity index, after discarding one of the items to create a more reliable measure. Affinity ranged from 4 to 20 ($M = 8.99$, $SD = 4.14$, $\alpha = 0.88$)

Finally, respondents were asked to indicate, on a scale of 1–5 (*strongly disagree* to *strongly agree*) their agreement with 27 statements that served as motivations for watching TV programs on an iPad. Items were adapted from prior research about TV viewing in general (Rubin, 1981). Eight items were used to measure ritualistic motivations ($M = 18.56$, $SD = 6.93$, $\alpha = 0.88$), and 8 items were used to measure instrumental motivations ($M = 17.84$, $SD = 7.02$, $\alpha = 0.91$). The 16 items were identical to those used by Ferguson and Perse (1993) but reworded to reflect iPad viewing.

Results

The first research question asked about the relationship between user demographics and viewing TV on an iPad. Neither age nor education was a significant predictor of iPad TV use. However, age and education were both negatively correlated with iPad TV repertoire ($r = -0.36$, $p < 0.01$, $N = 68$; $r = -0.32$, $p < 0.01$, $N = 70$). In addition, there was a near significant difference in iPad TV use related to gender ($t = 1.83$, degree of freedom = 50, $p = 0.07$). Males ($M = 39.38$ min, $SD = 63.61$, $N = 16$) tended to use the iPad for this purpose more than females ($M = 13.91$, $SD = 36.55$, $N = 36$).

RQ2a sought to determine whether iPad users have a repertoire of programs (and thus channels) that they regularly watch on their device. Results indicate that a repertoire exists based on the shows compared with the genres, as described above in the Method section. Repertoire was related to iPad TV satisfaction ($r = 0.25$, $p < 0.05$, $N = 69$).

To answer RQ2b, a hierarchical regression was run to see whether total repertoire and demographic variables predicted time spent viewing TV programs on an iPad. The results of the analysis did not show statistically significant predictors of time spent viewing.

The third research question focused on the relationship between affinity for the iPad and time spent with the device for viewing TV programs. Results showed that, while affinity is correlated with general use ($r = 0.45$, $p < 0.01$, $N = 44$), only 40 respondents used their iPad for watching TV ($r = 0.27$, $p = 0.09$). Given the size of the correlation, a slightly larger sample might have produced a significant association.

The fourth research question asked whether there was a relationship between iPad usage motives, technological experience, and the amount of time viewing TV on an iPad. A hierarchical regression of total iPad use for watching TV on demographics in the first step, iPad experience in the second step, and viewing motivations in the third step produced a significant model ($F = 2.87$, $p < 0.05$), explaining 38.1% of the variance. Neither the demographic variables

nor iPad experience were significant predictors, but ritualistic ($\beta = 0.06$) and instrumental motivations ($\beta = 0.44$) produced a significant ($p = 0.03$) change in R^2 ($\delta = 0.25$).

The final research question asked whether there was a relationship between time spent viewing TV on an iPad and viewing programs on a TV set or a computer. Results showed that there was a statistically significant positive correlation between viewing TV on an iPad and a regular TV set ($r = 0.32$; $p < 0.05$). However, there were no significant relationships between viewing TV on an iPad and PC or between TV viewing on a TV set and a PC.

Discussion

Since its debut in early 2010, Apple's iPad and its accompanying apps have dominated the tablet computer market. As of 2011, more than 80% of tablets in use were iPads (Walsh, 2011). By mid-2011, more than 100,000 apps had been developed or adapted for the device (Elmer-Dewitt, 2011). Media entities, including broadcasters and cable companies, are providing an increasing amount of content that can be viewed on the iPad. The purpose of this exploratory study was to examine the extent to which iPad users are watching TV programs on this technology, their motivations, and attitudes toward the device.

Demographic comparisons with iPad use for TV viewing produced mixed results. Prior research studies have noted that the diffusion of a new technology tends to be related to age, so that a younger demographic adopts the technology earlier than older ages. However, the results of the present study did not follow that pattern. Age was not found to be a significant predictor of using the iPad to watch TV. At the same time, however, both age and education levels were negatively correlated with repertoire. iPad TV users who were older and more educated appeared to have a smaller repertoire.

Previous research has examined what is termed 'channel repertoire', which is the number of TV channels that an individual views out of the total number of channels available (Ferguson and Perse, 1993). Earlier studies found that viewers have a small number of channels that they watch on a regular basis (e.g. Heeter, 1985), including viewers of satellite TV (Lochte and Warren, 1989). Even Internet users have been found to have a limited online repertoire of Web sites that they access regularly (Ferguson and Perse, 2000). As a point of comparison, the present study also examined iPad viewing repertoire, based on a list of TV shows compared with program genre. Consistent with prior research, this study found that iPad TV viewers also have a repertoire of content. Furthermore, repertoire was also related to iPad TV viewing satisfaction.

Results of this study showed that movies were the most watched form of programming on the iPad, followed by scripted TV shows. Given the Nielsen (2011) findings regarding the average amount of time people spent watching video on Netflix compared to other online video sources, an ad hoc analysis was run between Netflix usage on the iPad and the level of viewing movies on the device. Results showed a strong positive correlation between the two variables ($r = 0.64$, $p < 0.001$).

In contrast with the top two uses of the iPad noted above, users were less likely to watch news, sports, unscripted shows, and talk programs on their device. This finding is interesting compared with the findings of Fidler's (2010) study of iPad users. His research showed that, for his respondents, news and current events were the top contents accessed (in the last 30 days) on an iPad, while entertainment was the fifth most popular type of use. The finding that movies played a more important role for respondents in the present study might be due to the focus of this research. The invitation to participate in this study was targeted at people who watched TV programs on their

iPad. Therefore, individuals who completed the survey were likely more interested in entertainment rather than information content.

iPad usage studies have shown that owners of the device are loyal to the technology. Fidler (2010) found that 70% of users he surveyed were 'very satisfied' with the iPad and that 76% were very likely to 'recommend the iPad to a friend or relative' (para 3). Respondents to the present study also appeared to have a high level of satisfaction with the device. On a scale of 1–5, overall satisfaction averaged 4.09. However, when it came to watching TV on the iPad, the level of satisfaction averaged 2.95 on the same 5-point scale. Future research should seek to understand more about users' experience watching TV on the device. Another interesting finding was related to the affinity index. While respondents were satisfied with an iPad, affinity toward the technology ranged from 4 to 20, with a mean of just under 9 (out of a possible 20).

The big question for this study is whether using the iPad to watch TV is replacing TV viewing on regular sets. Some prior research has shown that displacement is not simply one medium versus another but rather might actually be dependent upon a person's use of the particular technology (e.g. Henke and Donohue, 1989) as well as usage motivations (e.g. Ferguson and Perse, 2000). In the present study, time spent watching TV on an iPad did not seem to be replacing time spent with watching a TV set. On the contrary, there was a positive correlation between the use of these two technologies. One possible explanation is that the iPad is a technology that is functionally similar to a TV set. Perhaps TV audiences are using different media to view the same content. At the same time, there were no significant relationships between time spent viewing TV on an iPad and a computer or between time spent viewing TV on a set and on a computer. Respondents were equally as likely to view TV programming on either of these technologies.

Motivations for viewing TV on an iPad are important to note. Demographic variables and iPad experience were not significant predictors of using the iPad to watch TV. However, a regression analysis showed that instrumental and ritualistic motivations were significant predictors. This suggests that people who use an iPad to watch TV are similar in their motivations to those observed in Rubin's (1981, 1984) early research about traditional TV viewing. This suggests that the iPad as a TV source might be perceived as functionally similar to traditional TV.

Although technology changes, some things remain the same. For example, iPad TV viewers exhibited similar habits in relation to channel repertoire. Future research should delve more deeply into that issue to determine whether individuals who watch TV on their iPad are viewing the same programs that they typically watch on a regular TV set.

A number of limitations should be noted regarding this study. The most important concern was the low response rate. Despite distributing survey invitations through a number of channels, few individuals completed the questionnaire. One reason might be the target audience. Because the purpose of the study was to assess the uses of the iPad for viewing TV, this immediately limited the number of respondents. Second might be the questionnaire itself. Comparing iPad TV viewing with prior TV studies necessitated the inclusion of multiple sets of scaled items, including the section with 27 motivations. A third reason is information overload. Given the amount of information that flows through social network sites, e-mail, and technology interest forums, it would be easy for readers to simply ignore the survey invitation.

Another limitation of this study is that data were gathered during the early implementation of the iPad. Since the present study was conducted in 2011, growth in the use of the iPad and other tablet computers has contributed to a potential increase in television viewing on these devices. According to a report by the Pew Internet & American Life Project, tablet ownership among adults in the U.S. increased from three-percent in May 2010 to 34-precent in May 2013 (Zickuhr, 2013).

Such findings emphasize the importance of examining this topic both for society and the television industry, particularly how individuals are using this technology. The present study sought to determine whether iPads were replacing the viewing of television on traditional sets. Given the continuing diffusion of tablet computers, forthcoming subsequent research will provide an updated picture about the use of tablets as a second television screen. In addition, the forthcoming study will examine the use of second screen apps that are associated with viewing television programs.

Since this is an exploratory study, application of the data should be used with caution. An attempt was made to distribute survey invitations through various channels across the United States. However, because of the low response rate, the results cannot be generalized to the population of iPad TV viewers. Despite that issue, this study provides at least a glimpse at individuals who use their iPad for this purpose. Additionally, this study provides broadcasters and other video content providers with helpful information about iPad TV viewers. Academic researchers and media practitioners should both continue to follow trends in iPad TV usage to determine how mobile technologies are changing the notion of the traditional audience member.

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