

## Nonlinear Program Repeat-Viewing Patterns and Their Determinants

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As the use of video-streaming services has become widespread, nonlinear TV viewing has given users a wider choice of video content. However, there is a lack of research on audience behavior related to program selection. This audience duplication research examined nonlinear viewing patterns of programs and analyzed the determinants of repeat viewing by using an integrated framework that considered both structural and individual factors. By analyzing the viewing data of 28,681 individual users who watched 113 programs, the results revealed that 52.9% of viewers in one week followed up with the same program the next week, and 61.4% of viewers of one episode watched the next episode, while the viewing pattern was different for each program type. Furthermore, structural factors showed a significant influence on repeat viewing, but program-type preference (individual factor) showed the largest influence.

*Keywords: repeat viewing, nonlinear TV viewing, media consumption, duality of media, video streaming*

With the development of on-demand services provided by online video-streaming platforms and mobile technology, nonlinear viewing of TV programs is becoming more widespread. According to surveys conducted by Deloitte (Westcott, Arbanaz, Downs, Arkenberg, & Jarvis, 2021; Westcott, Loucks, Downs, Arkenberg, & Jarvis, 2020; Westcott, Loucks, Downs, & Watson, 2017, 2019), streaming subscribers have increased over the years; in 2018, the proportion of streaming subscribers (69%) exceeded that of pay TV subscribers (65%) for the first time. A 2021 survey showed that the share of paid streaming subscriptions (82%) has been increasing annually. Furthermore, a 2021 survey in the United States showed that people spent one-fourth of their total TV-watching time on streaming (The Nielsen Company, 2021). In Korea, the over-the-top (OTT) channel usage rate grew to 66% in 2020, almost doubling from 35% in 2016 (Korea Communications Commission, 2016, 2020), indicating how common online streaming services and nonlinear TV viewing have become.

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Date submitted: 2022-02-09

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Nonlinear TV viewing, which allows users to select and watch videos in a wide range of structures and contexts on the Internet, offers users a broader selection of video content. This means that TV viewing is transitioning from push media to pull media (Negroponte, 1995; Neuman, Park, & Panek, 2012). Thus, the content-selection process of nonlinear viewing on online TV (i.e., pull media) would be different from that of traditional TV viewing (i.e., push media). Historically, channels had a lot of influence on content exposure due to continuous channel viewing on traditional TV (Goodhardt & Ehrenberg, 1969; Tiedge & Ksobiech, 1986; Webster, 1985; Yuan & Webster, 2006). On the flip side, recent studies on online TV from Korea showed that more than 95% of the respondents believed program content was more important than channels, and that they searched for the content they liked instead of selecting a channel (Yu, 2020, 2021). These results suggest that in pull media, the importance of individual programs over channels is higher. Notwithstanding this transformation, there is a research gap on how viewers actually engage in nonlinear viewing—a gap that few studies have addressed.

This study examines *repeat viewing* to understand users' program selection and viewing in pull media. This construct indicates how viewers repeatedly watch the same program (Goodhardt, Ehrenberg, & Collins, 1987). There are several studies on repeat viewing, viewing patterns, and determinants of push media (Cooper, 1996), but they use programs as the unit of analysis and focus on analyzing the influence of structural factors (e.g., program schedule), not considering individual factors (e.g., individual preference). Some researchers maintain that using aggregate data (i.e., a program as the unit of analysis) may lead to incorrect conclusions as it could fail to detect differences at the individual level (Brosius, Wober, & Weimann, 1992; Kelly, 1978). To address the theoretical gaps left by past empirical research on nonlinear program-viewing patterns, this study focuses on (1) identifying repeat-viewing patterns in nonlinear viewing of programs on an online video-streaming platform, and (2) investigating how structural and individual factors affect repeat viewing.

## Literature Review and Research Background

### *Online TV*

Online TV, that is, TV viewing via the Internet, is changing the pattern of TV consumption (Lotz, 2017). The most striking characteristic of online TV is the way programs are delivered via this medium. While traditional TV arranges programs according to a schedule and delivers them to a mass audience, an online video-streaming platform stores all episodes and offers them as a library to viewers (Lotz, 2017; Lüders & Sundet, 2022). This has made nonlinear viewing possible (Lotz, 2017), allowing viewers to self-schedule their viewing according to their lifestyle (Lüders & Sundet, 2022), leading to sequential viewing (Gilbert, 2019; Lüders & Sundet, 2022), and even binge-watching, that is, watching multiple episodes at one time (Lüders & Sundet, 2022).

Online TV enables and facilitates individual program selection. While linear TV leans on flow and induces viewers to watch programs arranged on a schedule, online TV viewing is associated with watching a specific program (Lüders & Sundet, 2022). In addition, online TV separates individual programs from channels (Lotz, 2017) in a way that the concept of a channel becomes meaningless (Tryon, 2013) and the program becomes a selection criterion for viewers (Yu, 2020, 2021).

Furthermore, new online TV technologies have broken the connection between content and screen (Bury & Li, 2015). For instance, mobile TV provides flexibility in time and space by providing various types of content immediately (Kim, Viswanathan, & Lee, 2020; Wong, Tan, Hew, & Ooi, 2016). Time-shift technology allows for on-demand viewing, and the use of mobile devices leads to viewing personalization or individualization (Simons, 2015). In particular, the recommendation function induces individuals to view different content according to their personal viewing history. Although online media control the catalog, interface, and recommendation mechanism provided to users and nudge them in a specific direction (Lüders & Sundet, 2022; Wu, Taneja, & Webster, 2021), the streaming platforms offer a vast content library and interactivity to give users considerable control (Gilbert, 2019; Nam, Lee, & Jun, 2019; Taneja, 2020; Tryon, 2013). To watch video content on an on-demand service, user actions such as browsing and selecting are essential (Gilbert, 2019) so that the viewer can control when and what to watch in a nonlinear way (Lüders & Sundet, 2022). As Gilbert (2019) states, online TV is "representative of 'pull' entertainment" (p. 687). Based on the extant research, this study investigates how individual program selection (i.e., repeat viewing) works in nonlinear online TV to give users extensive control.

### ***TV Repeat Viewing***

Repeat viewing refers to "the extent of audience overlap between different episodes of regular programs, usually screened one week apart" (Goodhardt et al., 1987, p. 51). It has been regarded as a measure of program loyalty (Cooper, 1996; Danaher & Dagger, 2012). This construct is used as a yardstick for evaluating the performance of TV programs by providing a different level of information than TV ratings (Sabavala & Morrison, 1977), and information for advertisers to create and implement advertising plans (Cooper, 1996; Webster & Wang, 1992). The initial studies on repeat viewing discovered a notable phenomenon: Despite a program having consistent ratings, the percentage of viewers watching the next episode of the program was just over half (e.g., 55%) of the total number of viewers of its previous episode (Goodhardt et al., 1987). Prior research also showed large inconsistencies in findings depending on the areas surveyed and measurement methodologies, showing repeat-viewing rates ranging from 24% to 53% (Barwise, 1986; Barwise, Ehrenberg, & Goodhardt, 1982; Danaher & Dagger, 2012; Ehrenberg & Wakshlag, 1987; Sherman, 1995; Webster & Wang, 1992; Zubayr, 1999). The difference in measurement method (diary method vs. people-meter measurement) was pointed out as the main cause (Sherman, 1995; Zubayr, 1999); the diary method had a higher possibility of evoking data distortion than observational methods (Webster, Phalen, & Lichty, 2013).

### ***Linear Versus Nonlinear TV Repeat Viewing***

Previous studies on linear viewing maintain that low repeat-viewing rates may be attributed to people not being able to watch the TV program during its scheduled broadcast time (Barwise et al., 1982). Therefore, higher availability and lack of time constraints for watching a given program may increase repeat viewing.

However, most studies on repeat viewing have reported a double-jeopardy effect (Barwise, 1986; Barwise et al., 1982; Ehrenberg & Wakshlag, 1987; Sherman, 1995; Webster & Wang, 1992; Zubayr, 1999), in which the low popularity of a program leads to low loyalty (Ehrenberg, Goodhardt, & Barwise, 1990). Moreover, in digital media environments, "as more media compete for attention, the audiences they seek become relatively scarce" (Webster, 2014, p. 1). This is expected to lower the viewing frequency of individual programs and

decrease repeat-viewing rates. Therefore, this study examines how these conflicting characteristics of nonlinear viewing of TV programs are reflected in repeat viewing, as framed in Research Question 1:

*RQ1: What would be the repeat-viewing rate of a program in the nonlinear viewing environment of an online video-streaming platform?*

Most studies on repeat viewing have exclusively analyzed entertainment programs. Examining multiple program types, Zubayr (1999) revealed that audiences showed loyalty toward fictional programs (including drama) and news and informational programs, and that there are differences in repeat-viewing rates by program type, with dramas showing a particularly high level of repeat viewing. Accordingly, Research Questions 2 and 3 seek to examine whether this tendency is maintained in nonlinear viewing, as follows.

*RQ2: Does repeat viewing vary by program type in the nonlinear viewing environment of an online video streaming platform?*

*RQ3: Is the repeat viewing of drama programs higher than that of other program types in the nonlinear viewing environment of an online video streaming platform?*

### ***Determinants of Repeat Viewing***

Studies on the determinants of repeat viewing have mostly focused on structural factors. For example, Webster and Wang (1992) studied the effect of ratings, scheduling, and program type; in their results, scheduling and ratings (in that order) were the most significant factors, and program type also had a significant effect. Webster and Wang included only structural factors in the research model but the fact that the model had a high explanatory power (83%) emphasizes the importance of these structural factors in studies on media exposure. Accordingly, the authors predicted that if there are no availability and schedule constraints toward program choices (e.g., VCR use), significant changes will occur in repeat-viewing patterns.

Sherman (1995) examined repeat viewing for public TV stations, showing that ratings and story continuity type were valid predictors. Still, households with a paid subscription to cable TV, which provided many channels to choose from, showed a low level of repeat viewing; however, in the regression analysis, such paid subscriptions did not have a significant effect on repeat viewing.

Zubayr (1999) studied repeat-viewing patterns in Germany and reported that ratings, schedule (airing frequency and time), program type, and channel had a significant effect on repeat viewing. The author also analyzed differences owing to program type and content: Programs with unpredictable content (i.e., which changed every episode, e.g., different sports events every week) showed low repeat viewing, whereas dramas showed high viewing.

In sum, these studies focused exclusively on the effects of structural factors on repeat viewing and used programs as the unit of analysis in various environments: In the United States and Germany, and in commercial and public TV stations.

### ***Integrated Model of TV Viewing***

Many studies on TV content choice and use are based on two assumptions (Cooper, 1996; Kim, 2016; Kim & Viswanathan, 2015; Webster & Wang, 1992). First, audiences choose programs based on individual needs or preferences (e.g., Rubin, 2002). Many researchers have applied the uses and gratification (U & G) theory to examine how individual factors (e.g., motivation or gratification) are connected to media choices. According to the U & G theory, "individuals have particular needs that drive the selection of certain types of media" (Sundar & Limperos, 2013, p. 506). However, the gratification that viewers expect when they use the media is not fixed over time; new gratifications are created by technological development (Sundar & Limperos, 2013). As for the U & G research on TV, Rubin (1983) discovered five motivations and subsequently classified TV use into two orientations accordingly: Ritualistic and instrumental use (Rubin, 1984). Recent studies (Tefertiller, 2018, 2020; Tefertiller & Sheehan, 2019) have investigated the motivation for TV use and online TV adoption. Although the distinction between the two orientations of TV use is still valid, the role of technological affordances, a new gratification, has become important with technological progress.

Second, audiences choose programs based on structural factors (e.g., availability), regardless of the content (Webster, 2009). Numerous studies have focused on this *structuralist* approach, covering four phenomena (inheritance effects, repeat viewing, channel loyalty, and repeated exposure) and focusing on audience duplication research (Cooper, 1996). They have proven that structural factors play a key role in viewers' content choices (e.g., Cooper, 1993; Webster, 1985).

These two different approaches, nonetheless, are not free from the criticism that this phenomenon cannot be comprehensively explained by exclusive, one-sided analyses (Cooper & Tang, 2009). Webster and Wakshlag (1983) presented a model that integrated both approaches, and Webster (2009, 2011) emphasized that a model to explain media exposure must include both the *media* and the *agents* (the people who choose media) as factors, or the *duality of media*—how the agents and media develop by constantly interacting with each other (Webster, 2011, 2014). This integrated model was adopted to investigate various media environments such as the Internet, personal computers, and mobile devices (Cooper & Tang, 2009; Kim, 2016; Kim & Viswanathan, 2015; Kim et al., 2020; Taneja & Viswanathan, 2014; Wonneberger, Schoenbach, & van Meurs, 2011; Wu et al., 2021; Yuan, 2010). Webster and colleagues (2013) also differentiated their model by subdividing these two factors into *structural determinants*, which characterize a group, and *individual determinants*, which are micro-level variables that vary among individuals. The subfactors are as follows: (a) *structural characteristics of audiences*, (b) *individual characteristics of audiences*, (c) *structural characteristics of media*, and (d) *individual characteristics of the media environment*. The present study uses Webster and colleagues' (2013) integrated model for audience behavior as its theoretical framework because it not only helps to analyze the media environment in an integrated way but also expands it to a detailed level.

#### *Structural Characteristics of Audiences*

Availability has been described as "one of the most powerful determinants of exposure to electronic media" (Cooper & Tang, 2009, p. 405). This concept plays a key role in both nonlinear and linear media use (Cooper & Tang, 2009; Taneja, Webster, Malthouse, & Ksiazek, 2012). The question is whether more opportunities to use media will lead to more consumption of the *same* programs. Media researchers

differentiate between active audiences, who want to watch specific programs, and passive audiences, who have habitual viewing patterns. The degree of TV viewing is significantly affected by availability (Webster & Wakshlag, 1983), and TV viewing has become active as content has moved online (Tryon, 2015). However, since media viewing occurs within the range of availability (Cooper, 1996), as the availability increases, the likelihood of selecting the same program would increase. Thus, the first hypothesis is proposed.

*H1: The availability of an online video-streaming platform has a positive effect on repeat viewing in the nonlinear viewing environment of an online video-streaming platform.*

#### *Individual Characteristics of Audiences*

Webster and colleagues (2013) described preference as the most important individual-level determinant. Webster and Wakshlag (1983) suggested a model for TV program choices that included program-type preferences, which lead to program preference. An empirical study in the TV market also reported that viewing the same program type increases audience duplication (Yuan, 2010), indicating that program-type preference has a positive effect on program repeat viewing, which yields the following hypothesis.

*H2: Program-type preference will have a positive effect on repeat viewing in the nonlinear viewing environment of an online video-streaming platform.*

#### *Individual Characteristics of the Media Environment*

These characteristics refer to the owned devices, subscriptions, and media repertoires of individual viewers. Webster and associates (2013) mentioned that individuals may change how they use media depending on the devices that they own (e.g., radio, TV, and smartphones). Watching TV on a mobile device provides viewers with ease and convenience, a wider range of choices (Do, Kim, Kim, & Kim, 2009), and various immediate content without time and space restrictions (Wong et al., 2016). The use of devices other than the TV screen, such as smartphones, shows a positive effect on the degree of binge-watching (Shim, Lim, Jung, & Shin, 2018). In addition, Shim and Sung (2022) argued that the use of various devices, as well as online streaming platforms, provides an environment that does not interfere with the continuous viewing of multiple episodes. Therefore, mobile use could have a positive effect on repeated viewing of the same program.

Moreover, when media users are faced with a situation where they have countless content options to choose from, they tend to develop a *limited menu* (also called a repertoire), which structures the individual media environment, eventually affecting media exposure (Webster et al., 2013). The construct of a repertoire was first analyzed within the context of TV channel use (Heeter, 1985) and later expanded to platforms that used various forms of media (Kim, 2016). This study investigates the effect of content repertoire on repeat viewing. The relationship between repertoire and media exposure has been investigated in the news genre. Wonneberger and Kim (2017) found that exposure to a wide range of repertoires results in higher news exposure. The authors interpreted the limited menu as a link to a small number of interesting commercial channels, limiting opportunities for “accidental” exposure to news. Therefore, as a limited menu is expected to increase the selection opportunities for a specific program, the following hypothesis was established.

*H3: Mobile device use will have a positive effect on repeat viewing in the nonlinear viewing environment of an online video-streaming platform.*

*H4: Fewer content repertoires will lead to a higher level of repeat viewing in the nonlinear viewing environment of an online video-streaming platform.*

### **Operationalization of Nonlinear Program Repeat Viewing**

To examine repeat viewing in a nonlinear viewing environment, it is necessary to change its operational definition. On a traditional TV platform, broadcasters transmit a program according to a fixed schedule, limiting audiences' viewing time and viewing content. Furthermore, each episode of a TV program is regularly aired at a fixed time, and the target of repeat-viewing studies has been a regular program (Zubayr, 1999). Naturally, push-media researchers equated a program's repeat viewing by period and continuous viewing by episode. For example, Goodhardt and colleagues (1987) defined repeat viewing as "the extent of audience overlap between different episodes of regular programs, usually screened one week apart" (p. 51). In addition, repeat viewing has been measured in episode pairs (Zubayr, 1999) and week pairs (weeks 1 and 2, 2 and 3, etc.; Danaher & Dagger, 2012) according to the research goal.

The flexibility provided by nonlinear viewing environments breaks the time and content coupling (Lotz, 2017), and the concepts of *repeat viewing by episode* and *repeat viewing by week* should be distinguished in such viewing.

### **Methods**

#### **Data**

The data set analyzed came from WAVVE,<sup>1</sup> the sole *online video-streaming platform* that provides all content present in terrestrial TV broadcasting stations across Korea and is a major *video-streaming* service. As of September 2020, its subscribers (both paying and nonpaying) had surpassed 10 million (Ko, 2020; Kwon, 2020).

The analysis was conducted for a total of four weeks, starting from November 2, 2020. The study participants were those aged between 20 and 60 years, whose sex was identified, who had records of video-on-demand (VOD) viewing of TV programs in the survey period, and who were presumed to be individual users. Stratified random sampling was conducted according to age and sex ratios based on the Korean 2019 census (Statistics Korea, 2020).

The programs analyzed included those with new episodes registered every week. In addition, only the programs watched by an average of 30 or more viewers each week during the survey period were

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<sup>1</sup> The use of this data is the result of a data use agreement with Content Wavve that provides the WAVVE service. Data pre-processing was performed on the data analysis system developed by KBS and the research results were not affected by Content Wavve.

included. Likewise, programs with an average viewership of fewer than 30 people per episode for four weeks were excluded. This is because repeat-viewing figures may be distorted for programs with very few viewers (Goodhardt et al., 1987). Moreover, to eliminate cases in which the program was chosen by mistake, data with no viewing records for more than 10 minutes per week (and per episode) were excluded, following previous studies (Yuan & Ksiazek, 2011; Yuan & Webster, 2006). In total, 28,681 *video-streaming* viewers and 113 programs were used as study subjects. To identify the programs and program types, program codes and genre classification managed by WAVVE were used, with one exception: Both local and international drama programs were categorized into a single classification: Dramas. This was done because previous studies have categorized program types based on the continuation of the storyline (Sherman, 1995; Webster & Wang, 1992). In addition, Quick VOD, which allows users to watch the programs nonlinearly even when they are on air, was included in the analysis.

To compare repeat-viewing patterns in the nonlinear viewing environment of *online video streaming* with the patterns of traditional TV, this study set the unit of analysis as the repeat-viewing rate of program viewing (RQ1–RQ3), and used *streaming* users to analyze the factors affecting repeat viewing (H1–H4). Collected data were analyzed using descriptive analysis, correlation, analysis of variance (ANOVA), and regression analysis using R.

### ***Measures of Repeat-Viewing Patterns***

#### *Weekly Repeat-Viewing Rate*

The proportion of those who rewatched a program in the next week was measured.

#### *Episode Repeat-Viewing Rate*

Following Zubayr's (1999) work, this study measured the rate at which viewers watched subsequent episodes.

### ***Determinants of Repeat Viewing: Dependent Variables***

#### *Weekly Repeat-Viewing Frequency*

The number of programs was obtained by analyzing how many programs were repeatedly watched by users based on the comparisons of pairs of weeks, and the total number was used in the analysis. To conduct analysis based on program type, this study classified the viewing data by program type and measured repeat viewing.

#### *Episode Repeat-Viewing Frequency*

This variable was measured by adding up the programs for which the viewers watched the following episodes consecutively; the process was the same as for weekly repeat-viewing frequency.



### ***Determinants of Repeat Viewing: Independent Variables***

#### *Availability*

Based on prior research (Kim, 2016; Wonneberger et al., 2011; Yuan & Webster, 2006), availability was obtained by measuring the total media use time. To measure availability, the total viewing time (seconds) of streaming platform users was calculated and a natural logarithm was applied.

#### *Program-Type Preference*

Following Kim (2016), program-type preferences were measured by calculating the ratio of time spent watching a specific program type to the total video-streaming viewing time (between 0 and 1) during the survey period.

#### *Mobile Device Use*

This study measured the ratio of time spent viewing programs on mobile devices (iOS and Android mobile phones and tablets) to the total viewing time of users (1 if one always used a mobile device, 0 if one never used it).

#### *Content Repertoire*

The content repertoire was measured by obtaining the diversity of content that viewers watched in a week, using Neuendorf, Atkin, and Jeffres' (2001) concept of secondary repertoire, which has been successfully applied in a media exposure study (Wonneberger & Kim, 2017). Weekly repertoire values were averaged. The content repertoire of VOD was measured by the program of movies by individual content and of real-time TV channels (retransmission of broadcast content) by channel since these are selectable content units in WAVVE.

### ***Determinants of Repeat Viewing: Control Variables***

#### *Sociodemographic Factors*

Sex was coded as a dummy variable ( $F = 1$ ), and age was classified into age groups by decades, from 20 to 60 years.

## **Results**

### ***Repeat-Viewing Rates of Programs in a Nonlinear Viewing Environment on an Online Video-Streaming Platform***

The analysis results showed that the average rate of nonlinear weekly repeat viewing of 113 programs in 335 week pairs was 52.9%. The average episode repeat-viewing rate of 528 episode pairs in four weeks was 61.4% (Table 1).

**Table 1. Results of ANOVA Tests by Program Type.**

Program Type	Number of Programs	Weekly Repeat-Viewing Rate			Episode Repeat-Viewing Rate		
		Average	SD	Number of Pairs	Average	SD	Number of Pairs
Drama	17	66.28 <sup>a</sup>	14.38	48	76.3 <sup>a</sup>	12.59	164
News	2	63.67 <sup>ab</sup>	7.44	6	50.26 <sup>c</sup>	10.44	54
Current affairs/culture	32	51.01 <sup>b</sup>	11.27	96	59.34 <sup>b</sup>	17.55	129
Entertainment	62	50.0 <sup>b</sup>	14.65	185	52.66 <sup>c</sup>	20.31	181
Total	113	52.87	14.76	335	61.39	19.62	528
		<b>F-value (3, 331) = 20.04***</b>			<b>F-value (3, 524) = 67.13***</b>		

Note. Different superscripts for each column indicate significant differences between program types according to Scheffé's post hoc test for multiple comparisons ( $p < .05$ ). \*\*\*  $p < .001$

Regarding program type, different repeat-viewing rates were observed. In the case of weekly program repeat viewing, the highest rate was observed for drama programs (66.3%), followed by news (63.7%), current affairs/culture (51.0%), and entertainment programs (50.0%). The results of ANOVA (Table 1) showed a significant difference by program type ( $F(3, 331) = 20.04, p < .001$ ). The results of Scheffé's post hoc tests showed that drama programs had more repeat viewing than current affairs and entertainment programs.

Similarly, a significant difference was confirmed as a result of examining the episode repeat-viewing rate by program type ( $F(3, 524) = 67.13, p < .001$ ). The drama genre (76.3%) had the highest repeat-viewing level of all types; current affairs/culture (59.3%) showed the second-highest number, and news (50.3%) showed the lowest along with entertainment (52.7%).

The difference between weekly and episode repetitive viewing of a program is noteworthy. Consecutive episode viewings of drama programs occurred 10% more frequently than weekly repeat viewing, whereas repeat viewing level of news programs decreased by more than 13%.

In sum, the repeat viewing rates in a nonlinear viewing environment on an *online video-streaming* platform were 52.9% for weekly repeat viewing and 61.4% for episode-by-episode repeat viewing, indicating that more than half of the viewers watched the same program again in the next week or watched the consecutive episode (RQ1). Furthermore, there were differences by program type (RQ2). Drama programs showed a higher level of repeat viewing compared with other program types, but the weekly repeat-viewing rate of drama programs was not different from that of news (RQ3).

#### **Determinants of Program Repeat Viewing in a Nonlinear Viewing Environment on an Online Video-Streaming Platform**

Table 2 shows the descriptive statistics results for the variables. Across the four weeks, there were 7.3 instances of weekly repeat viewing on average and 10.5 instances of continuous episode viewing on average among users of the *online video-streaming* platform. Moreover, 52.6% of the participants were

female, with most being in their 50s (23.5%), followed by those in their 30s and 40s (21.4%), 20s (18.6%), and 60s (15.2%).

**Table 2. Descriptive Statistics.**

Variable	N	Average	SD	Min	Max
Availability ( <i>ln</i> )	28681	11.51	1.07	7.3	14.61
News preference	28681	0.002	0.03	0	1
Drama preference	28681	0.33	0.32	0	1
Current affairs/culture preference	28681	0.06	0.14	0	1
Entertainment preference	28681	0.45	0.33	0	1
Mobile device use	28681	0.75	0.38	0	1
Content repertoire	28681	8.24	7.72	1	155
Age group	28681	39.52	13.41	20	60
Sex (dummy, 1 = female)	28681	0.53	0.5	0	1
Weekly repeat viewing	26499	7.29	7.64	1	91
Episode repeat viewing	26735	10.46	12.31	1	162

On analysis of the correlation among variables (Table 3), both types of repeat viewing showed a relatively strong correlation with availability and content repertoire. In addition, unexpectedly, a positive correlation was observed between repeat viewing and content repertoire. Furthermore, mobile device use showed a weak but negative correlation with repeat viewing.

**Table 3. Correlation Matrix.**

	1	2	3	4	5	6	7	8	9	10	11
1											
2	0										
3	.07*	-.04*									
4	-.02*	.02*	-.21*								
5	-.17*	-.05*	-.7*	-.18*							
6	-.1*	0	.07*	-.01	-.08*						
7	.57*	.01	-.07*	0	-.16*	.02*					
8	.14*	.02*	.13*	.02*	-.2*	.03*	.14*				
9	.04*	-.02*	.13*	-.03*	-.04*	.11*	0	.04*			
10	.54*	0	-.02*	.03*	.07*	-.04*	.57*	.08*	.06*		
11	.53*	.02*	.16*	0	-.08*	-.02*	.49*	.11*	.08*	.86*	

Note. 1 = Availability; 2 = News preference; 3 = Drama preference; 4 = Current affairs/culture preference; 5 = Entertainment preference; 6 = Mobile device use; 7 = Content repertoire; 8 = Age group; 9 = Sex; 10 = Weekly repeat viewing; 11 = Episode repeat viewing. \*  $p < .05$

Forward stepwise regression was conducted next to comprehensively determine the factors affecting program repeat viewing in a nonlinear viewing environment of an *online video-streaming* platform.

Before this, multicollinearity among variables was examined because the correlation between drama and entertainment preference was high, at  $-.7$ . The variance inflation factor (VIF) of all variables showed values lower than 5, not evoking suspicions of a multicollinearity problem (James, Witten, Hastie, & Tibshirani, 2013). Nonetheless, drama and entertainment preferences showed slightly high scores (2.92–2.99). Thus, the repeat-viewing data were classified by program type for the additional analyses. The highest VIF of all variables included in the models, as classified by program type, was 2.01.

Tables 4 and 5 show that the explanatory power of the model including all program types repeated weekly was 49.6%, and repeated episodes was 42.8%. Availability showed a positive effect in all program types and was a relevant factor influencing repeat viewing in the nonlinear viewing environment of the *online video-streaming* platform. Thus, H1 was supported.

Entertainment preference showed the greatest effect on weekly repeat viewing, and drama program preference showed the highest beta coefficient on episode repeat viewing. When analyzed by program type, all program-type preferences were shown to affect repeat viewing. Hence, H2 was supported by the research evidence.

Mobile device use showed significant results for repeat viewing of drama and entertainment program types and by episode of current affairs/culture type ( $p < .05$ ). Despite the expectation that a higher rate of mobile device use would lead to more frequent weekly viewing of the same program, it was found that mobile usage rate negatively affected repeat viewing for entertainment programs and episode repeat viewing for current affairs/culture programs. Only in the case of drama viewing, the use of mobile devices had a significant positive effect on the repeat viewing of programs; thus, H3 was partially supported.

Content repertoire also showed a significant effect on repeat viewing. However, contrary to expectations, viewers tended to watch the same program more frequently even when there was a diverse repertoire. Hence, H4 was not supported.

**Table 4. Determinants of Weekly Repeat Viewing.**

Variable	Total		News		Drama		Current Affairs/Culture		Entertainment	
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE
News preference	.04***	2.44	.76***	.45	----	----	----	----	----	----
Drama preference	.4***	.34	----	----	.34***	.12	----	----	----	----
Current affairs/culture preference	.22***	.52	----	----	----	----	.45***	.15	----	----
Entertainment preference	.55***	.33	----	----	----	----	----	----	.46***	.11
Availability	.33***	.08	.66***	.09	.37***	.04	.37***	.04	.41***	.04
Mobile device use	-.01#	.17			.02*	.08	-.02#	.07	-.01**	.08
Content repertoire	.49***	.01			.26***	.0	.26***	.0	.41***	.0
Age group	.02***	.0			.04***	.0			-.01*	.0
Sex	.03***	.13			.04***	.06			.03***	.06
<i>N</i>	26,499		178		13,018		5,706		21,038	
<i>R</i> <sup>2</sup>	.496		.439		.311		.274		.467	
Adjusted <i>R</i> <sup>2</sup>	.496		.432		.311		.272		.466	
<i>F</i> -value	2,901***		68.35***		977.9***		537.4***		3,066***	
<i>Df</i>	9, 26,489		2, 175		6, 13,011		4, 5,701		6, 21,031	

Note.  $\beta$  = beta coefficient. SE = standard error. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , #  $p < .1$

**Table 5. Determinants of Repeat Viewing by Episodes.**

Variable	Total		News		Drama		Current Affairs/Culture		Entertainment	
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE
News preference	.06***	2.41	.77***	2.84	----	----	----	----	----	----
Drama preference	.51***	.31	----	----	.39***	.29	----	----	----	----
Current affairs/culture preference	.18***	.49	----	----	----	----	.41***	.25	----	----
Entertainment preference	.44***	.3	----	----	----	----	----	----	.47***	.12
Availability	.35***	.07	.72***	.71	.45***	.1	.35***	.07	.44***	.04
Mobile device use					.02**	.21	-.06***	.11	-.02**	.08
Content repertoire	.39***	.01	-.13#	.07	.18***	.01	.21***	.01	.39***	.0
Age group	.03***	.0	-.1#	0.4	.03***	.01	.02#	.0	-.01*	.0
Sex	.02***	.12	.12#	.93	.03***	.15			.02***	.06
<i>N</i>	26,735		159		14,694		5,706		20,390	
<i>R</i> <sup>2</sup>	.428		.479		.331		.217		3,472	
Adjusted <i>R</i> <sup>2</sup>	.428		.462		.331		.216		.471	
<i>F</i> -value	2,496***		28.14***		1213***		305***		3,031***	
<i>Df</i>	8, 26,726		5, 153		6, 14,687		5, 5,502		6, 20,383	

Note.  $\beta$  = beta coefficient. SE = standard error. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , #  $p < .1$

### Discussion

Using program-viewing data from individual users, this study analyzed repeat-viewing patterns of the nonlinear viewing environment of an *online video-streaming* platform. Considering that nonlinear viewing is not bound by a program schedule, repeat viewing was analyzed by dividing it into weekly and episode repeat viewing. Furthermore, using an integrated model to explain media viewing, this study comprehensively examined the effects of audiences' structural factors, individual factors, and individual media environment factors on repeat viewing.

The results of the program unit analysis showed that the weekly continuous viewing rate of programs was 52.9% across four weeks and the episode-by-episode repeat viewing rate was 61.4%. Considering that the repeat-viewing rate of linear TV viewing had continuously declined from 55% before the 1980s to about 30% in the early 2000s (Sharp, Beal, & Collins, 2009), it can be inferred that the reduction of nonlinear temporal and spatial constraints granted viewers a degree of freedom in program selection.

The difference in viewing patterns by program type was remarkable. The drama type showed the highest repeat-viewing rate, and episode repeat viewing was 10% higher than the weekly repeat rate, suggesting that the pattern of watching multiple episodes within a short time had an effect. In contrast, in the case of news programs, where weekly repeat viewing was 13% higher than the episode repeat-viewing rate, *online video-streaming* viewers tend to watch the same news program every week rather than watch all the content of the news program.

However, 40% to 50% of viewers still do not watch the program repeatedly. Scholars who have researched repeat viewing of traditional TV argue that the lower-than-expected repeat viewership is because viewers are often not watching TV at the same time the week after (Barwise et al., 1982; Sharp et al., 2009). In addition, Ehrenberg and Wakshlag (1987) concluded that the repeat-viewing results in their study were lower than expected because of viewers' low involvement with TV media. Based on this interpretation, one may imply that consumer involvement with nonlinear TV media has remained low. However, in pull media, user behavior is relatively active (Tryon, 2015), so it is necessary to apply a different perspective. Woolley and Sharif (2022) demonstrated the "rabbit hole effect," in that the more similar content was watched, the greater the consumption. Interestingly, similar videos were more likely to be viewed over and over again, but the tendency to select and rewatch the same video (i.e., "rewatch the same educational video about black panthers") was lower than the tendency to select a video for the first time. The results can be explained by the relationship between variety seeking and satiation (Woolley & Sharif, 2022). Researchers suggest that consumers want to maximize overall experience utility by offsetting the stimulation they get from satiation of repeated selection and variety seeking (Sevilla, Lu, & Kahn, 2019). Therefore, the rate of choosing the same option may not be high because a certain degree of diversity is sought to maintain an appropriate level of stimulation (Woolley & Sharif, 2022).

This interpretation also explains the positive relationship between content repertoire and repeat viewing. In this research, content repertoire had a significant effect for all models, except for the news program type. Contrary to expectations, a more diverse content repertoire led to frequent program repeat viewing. This result may suggest that nonlinear video viewers choose the same program repeatedly while

selecting several programs rather than intensively watching a specific program. In the online TV environment, viewers seem to find the appropriate level of stimulus by using the same content (i.e., repeat viewing) and different content choices (i.e., repertoire).

Furthermore, as a result of the analysis of the antecedent factors of repeated viewing, both individual and structural factors showed a considerable influence on media selection, which is consistent with the results of previous studies investigating linear TV viewing (Cooper & Tang, 2009; Kim, 2016; Kim & Viswanathan, 2015; Wonneberger et al., 2011; Yuan, 2010). The results of this study showed that program type preference (an individual audience characteristic) was the most important factor affecting repeat viewing. This is in line with the argument that video consumption shifts to consumers with a transition from push media to pull media (Lee, Lee, & Kim, 2016; Neuman et al., 2012). The influence of the structural factors was dominant in that the repeat viewing of traditional linear TV viewers was mostly explained by the combination of the program schedule and the audience size (Webster & Wang, 1992). This study confirmed that viewers' preferences act as a strong antecedent factor in program selection in pull media.

Conversely, the use of mobile devices showed opposite results according to the program type. In the case of drama programs, the higher the mobile usage rate, the more frequently the same program was selected, whereas entertainment programs showed the opposite result. This means that the media consumption environment may vary by program type. According to Kim (2016), "people's orientation toward medium and preference for content types work together during the media selection process" (p. 10). This study confirmed that not only the viewing platform (such as terrestrial TV and cable TV) but also the viewing device influences the media-selection process. However, in this study, it was not possible to know whether the environment in which viewers are placed affects content selection or whether they view devices differently depending on content selection. It seems necessary to clarify the relationship between media selection and viewing environment through future research.

This study has theoretical and practical significance for several reasons. First, it showed the shift from push media to pull media; that is, program viewing is moving toward a better reflection of audience preferences, indicating the analysis of individual viewing patterns is becoming important. Second, this study extended the analysis to micro-level variables relevant to repeat viewing by including individual variables that had been left out of prior research. Third, the findings broaden our understanding of how viewers consume TV programs through video-streaming services. As TV viewing has shifted to pull media, viewers' options to choose individual programs have increased (Neuman et al., 2012); however, the change in the program-selection process has not been sufficiently investigated. This study is meaningful because it proves that viewers' increased influence on online TV program selection is expressed through preference and that new technological changes such as mobile use influence media selection. Fourth, the concept of program repeat viewing was defined operationally by dividing it into weekly repetition and repetition by episode. By examining both types of repeat viewing, viewing patterns for pull-media programs are deeply explored. In practical terms, this study is expected to inform *online video-streaming* providers. *Streaming* service planners may be able to increase competitiveness if they know users have different viewing patterns according to program types. They can also extract target audiences by analyzing viewer preferences and recommend appropriate content to them under diverse situations. Specifically, this study showed that viewers' desire to continuously use the same content and their desire for diversity go hand-in-hand.



Therefore, developing a strategy to recommend other content that stimulates viewers who watch one show may be useful.

Nevertheless, this study has a few limitations. First, the data analyzed were extracted from a single *online video-streaming* platform and covered only a fraction of the weekly registered programs; thus, generalizations should be made with caution. The fact that this study was limited to South Korea may be another obstacle to generalization. Nevertheless, Korea provides a suitable environment for online TV research as the penetration rate of smart devices is high, on-demand video viewing is commonplace, and the online TV market has grown and settled rapidly (Dwyer, Shim, Lee, & Hutchinson, 2018). Second, since this study was designed to analyze only secondary data, it failed to examine the various factors affecting viewing behavior—psychological factors, such as audience needs (Webster & Wakshlag, 1983) and motivation (Cooper & Tang, 2009; Kim & Viswanathan, 2015; Taneja & Viswanathan, 2014), as well as group viewing, which affects program choice (Taneja & Viswanathan, 2014; Webster & Wakshlag, 1983). Importantly, some structural factors (e.g., recommendations) were not considered, which may indeed have a significant effect on repeat viewing. Therefore, future research should attempt to analyze these variables by using new methodologies. Third, this study investigated structural and individual factors that influence program selection in a cross-sectional manner. In the long term, however, program choice can again influence these antecedents (Webster et al., 2013). Other studies have also reported the interaction effect of structural and individual factors under the scope of media exposure (Taneja & Viswanathan, 2014; Wonneberger et al., 2011). Since this was a short-term study, it failed to investigate more diverse relationships among variables.

Finally, to elucidate the overall process of program selection in a nonlinear environment, future studies must focus on (1) analyzing the influence of structural characteristics of media, including recommendations, and (2) comprehensively investigating the relationships among various variables through long-term studies.

### References

- Barwise, T. P. (1986). Repeat-viewing of prime-time TV series. *Journal of Advertising Research*, 26(4), 9–14.
- Barwise, T. P., Ehrenberg, A. S., & Goodhardt, G. J. (1982). Glued to the box? Patterns of TV repeat-viewing. *Journal of Communication*, 32(4), 22–29. doi:10.1111/j.1460-2466.1982.tb02515.x
- Brosius, H. B., Wober, M., & Weimann, G. (1992). The loyalty of television viewing: How consistent is TV viewing behavior? *Journal of Broadcasting & Electronic Media*, 36(3), 321–335. doi:10.1080/08838159209364180
- Bury, R., & Li, J. (2015). Is it live or is it timeshifted, streamed or downloaded? Watching television in the era of multiple screens. *New Media & Society*, 17(4), 592–610. doi:10.1177/1461444813508368

- Cooper, R. (1993). An expanded, integrated model for determining audience exposure to television. *Journal of Broadcasting & Electronic Media*, 37(4), 401–418.
- Cooper, R. (1996). The status and future of audience duplication research: An assessment of ratings-based theories of audience behavior. *Journal of Broadcasting & Electronic Media*, 40(1), 96–111. doi:10.1080/08838159609364335
- Cooper, R., & Tang, T. (2009). Predicting audience exposure to television in today's media environment: An empirical integration of active-audience and structural theories. *Journal of Broadcasting & Electronic Media*, 53(3), 400–418. doi:10.1080/08838150903102204
- Danaher, P. J., & Dagger, T. S. (2012). The 38-percent solution: Empirical generalizations for repeat viewing of television programs. *Journal of Advertising Research*, 52(2), 225–233. doi:10.2501/JAR-52-2-225-233
- Do, J., Kim, D., Kim, D. Y., & Kim, E. M. (2009). When mobile phones meet television . . . An FGI analysis of mobile broadcasting users in Korea. *Media, Culture & Society*, 31(4), 669–679. doi:10.1177/0163443709335282
- Dwyer, T., Shim, Y., Lee, H., & Hutchinson, J. (2018). Comparing digital media industries in South Korea and Australia: The case of Netflix take-up. *International Journal of Communication*, 12, 4553–4572.
- Ehrenberg, A. S., Goodhardt, G. J., & Barwise, T. P. (1990). Double jeopardy revisited. *Journal of Marketing*, 54(3), 82–91. doi:10.1177/002224299005400307
- Ehrenberg, A. S., & Wakshlag, J. (1987). Repeat-viewing with people meters. *Journal of Advertising Research*, 27(1), 9–13.
- Gilbert, A. (2019). Push, pull, rerun: Television reruns and streaming media. *Television & New Media*, 20(7), 686–701. doi:10.1177/1527476419842418
- Goodhardt, G. J., & Ehrenberg, A. S. (1969). Duplication of television viewing between and within channels. *Journal of Marketing Research*, 6(2), 169–178. doi:10.1177/002224376900600205
- Goodhardt, G. J., Ehrenberg, A. S., & Collins, M. A. (1987). Repeat-viewing. In *The television audience: Patterns of viewing. An update* (2nd ed., pp. 51–69). Aldershot, UK: Gower Publishing.
- Heeter, C. (1985). Program selection with abundance of choice: A process model. *Human Communication Research*, 12(1), 126–152. doi:10.1111/j.1468-2958.1985.tb00070.x
- James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). *An introduction to statistical learning: With applications in R*. New York, NY: Springer.

- Kelly, J. R. (1978). Leisure styles and choices in three environments. *Pacific Sociological Review*, 21(2), 187–207. doi:10.2307/1388859
- Kim, S. J. (2016). A repertoire approach to cross-platform media use behavior. *New Media & Society*, 18(3), 353–372. doi:10.1177/1461444814543162
- Kim, S. J., & Viswanathan, V. (2015). The role of individual and structural factors in explaining television channel choice and duration. *International Journal of Communication*, 9, 3502–3522.
- Kim, S. J., Viswanathan, V., & Lee, H. M. (2020). Platform war vs. platform synergy? A longitudinal analysis of media substitution between personal computers and mobile devices. *Journal of Broadcasting & Electronic Media*, 64(2), 65–88. doi:10.1080/08838151.2020.1718986
- Ko, J. (2020, September 28). WAVVE's 1st anniversary→10 million paid subscribers reached and subscriber numbers tripled. Can it compete against Netflix? *Sports Chosun*. Retrieved from <https://sports.chosun.com/news/ntype.htm?id=202009290100260730016966&ServiceDate=20200928>
- Korea Communications Commission. (2016). *2016 broadcast media usage behavior survey*. Retrieved from <https://www.kcc.go.kr/download.do?fileSeq=44520>
- Korea Communications Commission. (2020). *2020 broadcast media usage behavior survey*. Retrieved from <https://www.kcc.go.kr/download.do?fileSeq=51187>
- Kwon, S. (2020, September 28). WAVVE surpassed 10 million subscribers in 1 year and plans to carry out "Aggressive investment next year." *SBS Biz*. Retrieved from <https://biz.sbs.co.kr/article/10000997886>
- Lee, S. Y., Lee, S. W., & Kim, C. (2016). Time displacement effect of online video services on other media in South Korea. *Telematics and Informatics*, 33(2), 247–255. doi:10.1016/j.tele.2015.08.002
- Lotz, A. D. (2017). *Portals: A treatise on internet-distributed television*. Ann Arbor: Michigan Publishing, University of Michigan Library. Retrieved from <https://quod.lib.umich.edu/m/maize/mpub9699689>
- Lüders, M., & Sundet, V. S. (2022). Conceptualizing the experiential affordances of watching online TV. *Television & New Media*, 23(4), 335–351. doi:10.1177/15274764211010943
- Nam, Y., Lee, H. S., & Jun, J. W. (2019). The influence of pre-roll advertising VOD via IPTV and mobile TV on consumers in Korea. *International Journal of Advertising*, 38(6), 867–885. doi:10.1080/02650487.2019.1637613
- Negroponce, N. (1995). *Being digital*. London, UK: Hodder and Stoughton.

- Neuendorf, K. A., Atkin, D. J., & Jeffres, L. W. (2001). Reconceptualizing channel repertoire in the urban cable environment. *Journal of Broadcasting & Electronic Media*, 45(3), 464–482. doi:10.1207/s15506878jobem4503\_6
- Neuman, W. R., Park, Y. J., & Panek, E. (2012). Tracking the flow of information into the home: An empirical assessment of the digital revolution in the United States, 1960–2005. *International Journal of Communication*, 6, 1022–1041.
- Rubin, A. M. (1983). Television uses and gratifications: The interactions of viewing patterns and motivations. *Journal of Broadcasting*, 27(1), 37–51. doi:10.1080/08838158309386471
- Rubin, A. M. (1984). Ritualized and instrumental television viewing. *Journal of Communication*, 34(3), 67–77. doi:10.1111/j.1460-2466.1984.tb02174.x
- Rubin, A. M. (2002). The uses-and-gratifications perspective of media effects. In J. Bryant, & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (pp. 525–548). Mahwah, NJ: Lawrence Erlbaum Associates.
- Sabavala, D. J., & Morrison, D. G. (1977). A model of TV show loyalty. *Journal of Advertising Research*, 17(6), 35–43.
- Sevilla, J., Lu, J., & Kahn, B. E. (2019). Variety seeking, satiation, and maximizing enjoyment over time. *Journal of Consumer Psychology*, 29(1), 89–103. doi:10.1002/jcpy.1068
- Sharp, B., Beal, V., & Collins, M. (2009). Television: Back to the future. *Journal of Advertising Research*, 49(2), 211–219. doi:10.2501/S002184990909031X
- Sherman, S. M. (1995). Determinants of repeat viewing to prime-time public television programming. *Journal of Broadcasting & Electronic Media*, 39(4), 472–481. doi:10.1080/08838159509364320
- Shim, H., Lim, S., Jung, E. E., & Shin, E. (2018). I hate binge-watching but I can't help doing it: The moderating effect of immediate gratification and need for cognition on binge-watching attitude-behavior relation. *Telematics and Informatics*, 35(7), 1971–1979. doi:10.1016/j.tele.2018.07.001
- Shim, H., & Sung, Y. H. (2022). Binge-watching dependence: A function of sensation seeking, need for cognition, and flow. *International Journal of Communication*, 16, 2688–2708.
- Simons, N. (2015). TV drama as a social experience: An empirical investigation of the social dimensions of watching TV drama in the age of non-linear television. *Communications*, 40(2), 219–236. doi:10.1515/commun-2015-0005
- Statistics Korea. (2020). *Population census. Daejeon, South Korea*. Retrieved from <https://kosis.kr/statisticsList/statisticsListIndex.do?publicationYN=Y&statId=1962001#content-group>

- Sundar, S. S., & Limperos, A. M. (2013). Uses and grats 2.0: New gratifications for new media. *Journal of Broadcasting & Electronic Media*, 57(4), 504–525. doi:10.1080/08838151.2013.845827
- Taneja, H. (2020). The myth of targeting small, but loyal niche audiences: Double-jeopardy effects in digital-media consumption. *Journal of Advertising Research*, 60(3), 239–250. doi:10.2501/JAR-2019-037
- Taneja, H., & Viswanathan, V. (2014). Still glued to the box? Television viewing explained in a multi-platform age integrating individual and situational predictors. *International Journal of Communication*, 8, 2134–2159.
- Taneja, H., Webster, J. G., Malthouse, E. C., & Ksiazek, T. B. (2012). Media consumption across platforms: Identifying user-defined repertoires. *New Media & Society*, 14(6), 951–968. doi:10.1177/1461444811436146
- Tefertiller, A. (2018). Media substitution in cable cord-cutting: The adoption of web-streaming television. *Journal of Broadcasting & Electronic Media*, 62(3), 390–407. doi:10.1080/08838151.2018.1451868
- Tefertiller, A. (2020). Cable cord-cutting and streaming adoption: Advertising avoidance and technology acceptance in television innovation. *Telematics and Informatics*, 51, 101416. doi:10.1016/j.tele.2020.101416
- Tefertiller, A., & Sheehan, K. (2019). TV in the streaming age: Motivations, behaviors, and satisfaction of post-network television. *Journal of Broadcasting & Electronic Media*, 63(4), 595–616. doi:10.1080/08838151.2019.1698233
- The Nielsen Company. (2021). *The Gauge shows streaming is taking a seat at the table*. Retrieved from <https://www.nielsen.com/us/en/insights/article/2021/the-gauge-shows-streaming-takes-a-seat-at-the-table/>
- Tiedge, J. T., & Ksobiech, K. J. (1986). The “lead-in” strategy for prime-time TV: Does it increase the audience? *Journal of Communication*, 36(3), 51–63. doi:10.1111/j.1460-2466.1986.tb01437.x
- Tryon, C. (2013). *On-demand culture: Digital delivery and the future of movies*. New Brunswick, NJ: Rutgers University Press.
- Tryon, C. (2015). TV got better: Netflix’s original programming strategies and binge viewing. *Media Industries Journal*, 2(2), 104–116. doi:10.3998/mij.15031809.0002.206
- Webster, J., Phalen, P., & Lichty, L. (2013). *Ratings analysis: Audience measurement and analytics* (4th ed.). New York, NY: Routledge.

- Webster, J. G. (1985). Program audience duplication: A study of television inheritance effects. *Journal of Broadcasting & Electronic Media*, 29(2), 121–133. doi:10.1080/08838158509386571
- Webster, J. G. (2009). The role of structure in media choice. In T. Hartmann (Ed.), *Media choice: A theoretical and empirical overview* (pp. 221–233). New York, NY: Routledge.
- Webster, J. G. (2011). The duality of media: A structural theory of public attention. *Communication Theory*, 21(1), 43–66. doi:10.1111/j.1468-2885.2010.01375.x
- Webster, J. G. (2014). *The marketplace of attention: How audiences take shape in a digital age*. Cambridge, MA: The MIT Press.
- Webster, J. G., & Wakshlag, J. J. (1983). A theory of television program choice. *Communication Research*, 10(4), 430–446. doi:10.1177/009365083010004002
- Webster, J. G., & Wang, T. Y. (1992). Structural determinants of exposure to television: The case of repeat viewing. *Journal of Broadcasting & Electronic Media*, 36(2), 125–136. doi:10.1080/08838159209364162
- Westcott, K., Arbanas, J., Downs, K., Arkenberg, C., & Jarvis, D. (2021). Digital media trends, 15th edition: Courting the consumer in a world of choice. *Deloitte Insights*. Retrieved from [https://www2.deloitte.com/content/dam/insights/articles/7157\\_Digital-media-trends-15-ed/DI\\_Digital\\_media-trends-15ed.pdf](https://www2.deloitte.com/content/dam/insights/articles/7157_Digital-media-trends-15-ed/DI_Digital_media-trends-15ed.pdf)
- Westcott, K., Loucks, J., Downs, K., Arkenberg, C., & Jarvis, D. (2020). Digital media trends survey, 14th edition. *Deloitte Insights*. Retrieved from [https://www2.deloitte.com/content/dam/insights/us/articles/6456\\_digital-media-trends-covid/DI\\_Digital-media-trends-14th-edition.pdf](https://www2.deloitte.com/content/dam/insights/us/articles/6456_digital-media-trends-covid/DI_Digital-media-trends-14th-edition.pdf)
- Westcott, K., Loucks, J., Downs, K., & Watson, J. (2017). Digital media trends survey, 12th edition. *Deloitte Insights*. Retrieved from [https://www2.deloitte.com/content/dam/insights/us/articles/4479\\_Digital-media-trends/4479\\_Digital\\_media\\_trends\\_Exec\\_Sum\\_vFINAL.pdf](https://www2.deloitte.com/content/dam/insights/us/articles/4479_Digital-media-trends/4479_Digital_media_trends_Exec_Sum_vFINAL.pdf)
- Westcott, K., Loucks, J., Downs, K., & Watson, J. (2019). Digital media trends survey, 13th edition. *Deloitte Insights*. Retrieved from [https://www2.deloitte.com/content/dam/Deloitte/It/Documents/technology-media-telecommunications/LT\\_DI\\_Digital-media-trends-13th-edition.pdf](https://www2.deloitte.com/content/dam/Deloitte/It/Documents/technology-media-telecommunications/LT_DI_Digital-media-trends-13th-edition.pdf)
- Wong, C. H., Tan, G. W. H., Hew, T. S., & Ooi, K. B. (2016). Can mobile TV be a new revolution in the television industry? *Computers in Human Behavior*, 55, 764–776. doi:10.1016/j.chb.2015.10.021

- Wonneberger, A., & Kim, S. J. (2017). TV news exposure of young people in changing viewing environments: A longitudinal, cross-national comparison using people-meter data. *International Journal of Communication, 11*, 72–93.
- Wonneberger, A., Schoenbach, K., & van Meurs, L. (2011). Interest in news and politics- or situational determinants? Why people watch the news. *Journal of Broadcasting & Electronic Media, 55*(3), 325–343. doi:10.1080/08838151.2011.597466
- Woolley, K., & Sharif, M. A. (2022). Down a rabbit hole: How prior media consumption shapes subsequent media consumption. *Journal of Marketing Research, 59*(3), 453–471. doi:10.1177/00222437211055403
- Wu, A. X., Taneja, H., & Webster, J. G. (2021). Going with the flow: Nudging attention online. *New Media & Society, 23*(10), 2979–2998. doi:10.1177/1461444820941183
- Yu, K. (2020). *Analysis of users' behavior patterns exhibited in major Korean OTT services* (Unpublished research report). Seoul, South Korea: Korean Broadcasting System.
- Yu, K. (2021). *Analysis of users' behavior patterns exhibited in major Korean OTT services 2021* (Unpublished research report). Seoul, South Korea: Korean Broadcasting System.
- Yuan, E. (2010). Audience duplication and its determinants: A study in the multichannel and multiculture television market in Guangzhou, China. *Asian Journal of Communication, 20*(3), 354–366. doi:10.1080/01292981003802200
- Yuan, E. J., & Ksiazek, T. B. (2011). The duality of structure in China's national television market: A network analysis of audience behavior. *Journal of Broadcasting & Electronic Media, 55*(2), 180–197. doi:10.1080/08838151.2011.570825
- Yuan, E. J., & Webster, J. G. (2006). Channel repertoires: Using Peoplemeter data in Beijing. *Journal of Broadcasting & Electronic Media, 50*(3), 524–536. doi:10.1207/s15506878jobem5003\_10
- Zubayr, C. (1999). The loyal viewer? Patterns of repeat viewing in Germany. *Journal of Broadcasting & Electronic Media, 43*(3), 346–363. doi:10.1080/08838159909364496