

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

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ABSTRACT

Binge-watching is becoming a new “norm” for viewers in the way they consume their favorite TV shows and movies, nevertheless, most scholarly research on binge-watching remains exploratory. This study investigated (1) the relationship between attitudes toward binge-watching and the extent of binge-watching and (2) the role of viewers' personality traits (i.e., immediate gratification [IG] and needs for cognition [NFC]) on this association. The results from the analysis of the survey data (N = 714) illustrated that there was a positive association between viewers' negative attitudes and the extent of their binge-watching, showing a signature indicator of attitude-discrepant behaviors. Furthermore, a significant interaction effect of a negative attitude toward binge-watching and IG on binge-watching behavior was found. High-IG respondents with a negative attitude toward binge-watching were more likely to binge-watch than their low-IG counterparts, marked by a greater negative attitude toward binge-watching as a guilty pleasure.

1. Introduction

The way TV is consumed is rapidly evolving to adapt to changes in platforms; broadcast and cable TV have been evidently declining, and an increase in people turning to video on demand (VOD), digital video recordings (DVR), and online streaming services in order to access entertainment content has become prominent. As opposed to “scheduled and synchronized” traditional television (Jenner, 2017), online video platforms offer the viewer uninterrupted access to many TV series and movies, and viewers also now have the opportunity to watch multiple episodes of programs in a single sitting or an entire season over the course of a few days (Hirsén, 2015). Binge-watching is thus becoming a new “norm” for viewers in consuming their favorite TV shows and movies (West, 2013; Horvath et al., 2017); a recent survey reports that 73% of Americans binge-watched video content (Deloitte, 2017). As Jenner (2016) suggests, what exactly constitutes a binge is likely to differ for everybody and be defined through highly individualized terms and practices; a majority of recent studies define binge-watching as watching three or more episodes of one series in a single sitting (Spangler, 2013; Ciaramella and Biscuiti, 2014; Horvath et al., 2017). A precise definition, however, of how many episodes per occasion constitutes binge-watching, could be a controversial issue without a definitive conclusion, and we might be able to tell where the actual threshold of binge-watching resides once more empirical results have accumulated.

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The new video platforms mentioned above not only initiated this new norm of TV watching but now adapt the contents and forms of their services to actively encourage binge-watching. The rising popularity of new online platforms such as Netflix as not only platforms for viewing but also producers of content has led to what is colloquially known as the “Netflix effect” (Matrix, 2014; Roxborough, 2014). Having begun as a DVD rental service, Netflix now offers through its streaming service their own shows, in addition to full seasons of series produced by traditional television networks, which has changed how TV is written, produced, and consumed: Netflix is not only aware of the increase in binge-watching but seems to be encouraging it as a viable consumptive activity (Pittman and Sheehan, 2015). For instance, Netflix released all the episodes of a series for some of their original shows, such as *House of Cards* and *Arrested Developments*, on the first days their seasons were released. Great fans of those series would consume the entire season in a few days, watching multiple episodes in a consecutive manner. According to one survey, approximately 25 percent of binge-watchers watched an entire 13-h season in two days (Shannon-Missal, 2013). A recent survey found that young American binge-watchers watch six episodes or five hours of video content on average in a sitting (Deloitte, 2017).

An increasing number of studies (e.g., Hirsén, 2015; Jenner, 2016) have been conducted to elucidate the nature of binge-watching from various perspectives. Nevertheless, most of them remain exploratory and largely descriptive. More theoretical and empirical understanding of the antecedents and effects of binge-watching on the viewer is warranted for a better understanding of the fast-changing media landscape. This study attempts to explore the roles that viewer personality traits play on the extent and nature of binge-watching, and to particularly examine how binge-watchers’ negative attitudes toward binge-watching are associated with the extent of their participation in the behavior. Furthermore, the moderating effects of personality traits, including immediate gratification (IG) and need for cognition (NFC), are investigated.

2. Theoretical framework and hypotheses

2.1. Negative attitudes toward binge-watching

Pittman and Sheehan (2015) examined why individuals binge-watch in attempts to identify personal and social antecedents that are salient for binge-watching, based on the uses and gratification approach. Pittman and Sheehan noted that binge-watching can occur on both traditional television platforms (such as watching a marathon of *Breaking Bad* on its cable channel) and digital streaming services such as Netflix and Hulu. Their results revealed that individuals’ psychological motivations that drive binge-watching are classified into five major factors: engagement, relaxation, pass-time, hedonism, and social. While engagement, relaxation, and pass-time align with motivations found in traditional TV watching, hedonism and social motivations emerged as salient factors for regular binge-watchers: the program’s aesthetic qualities and the communal aspects of the program seem to play an important role in binge-watching behavior. Pittman and Sheehan concluded that binge-watching is a blend of traditional TV watching and Internet usage that results in unique motivation, in that those five motivations match up with the previously established gratifications of both Internet and TV use.

Although the motivational approach toward this newly developing norm of television watching naturally focuses on the positive psychological experiences that facilitate and reinforce the behavior, it is worth noting that viewers seem to simultaneously feel negative sentiments toward binge-watching. Given that the amount of viewing time signifies the bingeing behavior, binge-watching might align with the concept of “heavy” viewing of traditional television, which typically has been linked to various negative repercussions. A number of studies have associated physical (e.g., obesity, sleep difficulties), mental (e.g., depression, loneliness), and social (e.g., avoidance of relationship maintenance) problems with excessive TV watching (Sigman, 2007; Chory and Banfield, 2009; Frey et al., 2007; Zhang et al., 2017). Recent studies of TV viewers found that those who binge-watched were likely to report higher average screen time as well as higher levels of stress, anxiety and depression (Karmarkar and Kruger, 2016; Ahmed, 2017). Other negative psychological experiences viewers experienced after binge-watching included feeling sluggish, neglectful of other aspects of their lives, and less active (Ciaramella and Biscuiti, 2014). Walton-Pattison et al. (2016) argue that binge-watching generates feelings of regret, such as when it extends into the early hours of the morning, which affects sleep and the day ahead. These possibly negative consequences of binge-watching might contribute to viewers’ forming negative attitudes toward binge-watching itself, leading one to question, how does this negative attitude influence the extent of binge-watching?

Although it is natural to assume that a viewer’s negative attitude toward binge-watching is likely to decrease actual binge-watching behavior, another line of research (e.g., Ajzen, 2005; Forrest et al., 2016; Krahé, and Altwasser, 2006; Orford, 2001; Rigby, 2005) maintains that people often engage in attitude-discrepant behavior; these discrepancies have been particularly prominent in habit-forming behaviors such as smoking and alcohol drinking. Orford (2001) argued that ambivalence, the act of maintaining both positive and negative attitudes toward a substance or activity, constitutes one of the primary cognitive characteristics of addiction. Similarly, Forrest et al. (2016) found that game players’ regrets predicted problematic game play behavior and interpreted that regret may serve to exacerbate negative emotional states, which problematic players may alleviate by continuing to turn to video games. Thus, it also seems sensible to postulate that negative attitudes toward binge-watching might not effectively reduce the extent of the viewership. In order to investigate the association between negative attitudes and the degree of binge-watching, RQ1 is:

RQ1: How are negative attitudes toward binge-watching associated with the extent of binge-watching?

2.2. Immediate gratification

Gratification in media users has been conceptualized in a variety of ways, and one of the ways to classify it is its temporal

dimension; how soon psychological needs are gratified once they are sought after determines their immediacy. Immediate gratification (IG) privileges instant need satisfaction, whereas delayed gratification opts for more attractive delayed rewards than immediate ones when a choice is given (Lagorio and Madden, 2005). How individuals respond differently to the temporal aspects of reward has been repeatedly noted as an important personality trait that influences different aspects of life. For example, since Mischel's original 1974 study, delayed gratification has been proven to be a reliable predictor of children's success in their adolescent years: Children who can resist the attraction of immediate reward for a greater reward after a time interval seem to show better education and professional achievement outcomes later in life.

The constant availability of content helps us to fully enjoy media gratifications whenever and wherever we want, and such easy access to pleasurable media experiences imposes a new challenge to media users to maintain a balance between the short-term pleasures and the potential costs of media exposure (Hoffmann et al., 2017). This balance resides between the poles marked by immediate and delayed gratification and depends on a media user's volitional choice not to yield to media temptations (e.g., binge-watching) over other goals or values.

Binge-watching may itself have a conflicting and/or facilitating impact on the pursuit of other personal goals, such as facilitating socializing and/or preventing household chores or work (Walton-Pattison et al., 2016). For instance, a college student who has an important exam early in the next morning spends the evening watching a TV series instead of studying; in this case, the temptation of watching TV conflicts with the self-regulatory goal of academic achievement. In fact, Reinecke and Hofmann (2016) suggested that giving in to media desires is among the most prevalent forms of self-control failure today; the close physical proximity of various leisure media experiences, especially via mobile media technology, amounts to having a temptation nearby in all places at all times (Panek, 2013). That is, those who have little self-control, and are thus more vulnerable to tempting options that deliver IG, are more apt to use tempting, proximate media such as mobile platforms more often. Panek (2013) suggested that the constant presence of online video and social networking sites and their associated flexible schedules test self-control to a greater degree than media experiences constrained by time and place.

In our study that deals with media context, a tendency to seek immediate gratification seems to best represent this lack of self-regulation because "immediate gratification" itself is an important affordance of media and communication technologies as well (Hoffmann et al., 2017). People use media expecting and seeking various forms of IG (Hoffmann et al., 2017; Katz et al., 1974; van Koningsbruggen et al., 2017), and IG can tempt media users to consume media content for far too much time. Considering IG as an innate affordance of media, measuring a tendency to seek IG over other self-regulatory concepts is better-fitting for our binge-watching study in a media context. In this context, it appears that binge-watching exemplifies users' IG behaviors in media environments in which the time and place constraints are removed. Differences in viewers' responses to the urge to "click on the next episode" and view "just one more" are likely to moderate their attitudes toward binge-viewing along with the actual extent of it. Thus, the hypothesis is as follows:

H1. The association between negative attitudes toward binge-watching and binge-watching behavior is moderated by immediate gratification.

2.3. Need for cognition

NFC refers to an individual's tendency to seek, engage in, and enjoy effortful thinking (Cacioppo et al., 1984), and it has successfully predicted dispositional differences in cognitive motivation across individuals in a number of psychological studies (e.g., Aquino et al., 2016; Dinić and Smederevac, 2015). These studies unanimously suggest that people with a high NFC possess an intrinsic motivation for thinking and information processing whereas those with a low NFC prefer to avoid cognitively demanding activities (Martin et al., 2005). High-NFC individuals who derive enjoyment from problem-solving and effortful thinking also score highly on related cognitive dispositions such as intrinsic motivations for cogitation, curiosity, and cognitive innovativeness (Cacioppo et al., 1996).

NFC is also known to be one of the key antecedents that determine the way in which and the extent to which individuals cognitively engage and process media content. In general, media users characterized by high NFC tend to engage in deep understanding of the narrative, build a well-integrated situation model, and enjoy the processes and outcomes of the cognitively-demanding activity (Dai and Wang, 2007). For example, varying levels of NFC were found to predict the use of information services on the Internet (Kaynar and Amichai-Hamburger, 2008) and the effects of interactive advertisement (Sicilia et al., 2005). In regards to television viewing, Perse (1992) found that NFC was a strong predictor of local news viewing and attention. Furthermore, Tsifti and Cappella (2005) suggested that people may consume mainstream news despite their media skepticism due to a strong NFC: High-NFC news viewers were relatively unaffected by their trust in the news media while paradoxically, those with extremely high levels of NFC consumed more mainstream news as their skepticism increased.

NFC influences how various forms of media content are consumed including news, documentaries, and entertainment genres. For instance, criminal investigations (e.g., CSI), fantasies (e.g., Game of Thrones), and mysteries (e.g., Sherlock) in TV series continue to present the binge-watcher with complex plots and narratives to stimulate and feed the viewer's curiosity and thoughts. Prior studies (e.g., Brock and Livingston, 2004; Hall and Zwarun, 2012) also validate the significant relationship between NFC and entertainment consumption. Hall and Zwarun (2012) reported that NFC was significantly associated with fantastical fiction that addressed serious political and social issues in the real world.

In this context, it is important to note the association between NFC and curiosity; the sequential nature of TV shows is often exhibited through the plot pattern commonly known as a "cliffhanger". Cliffhanger endings are probably the most popular plot device

used in TV series; they feature TV characters in a precarious or difficult dilemma or confronted with a shocking revelation at the end of an episode of serialized fiction (Michlin, 2011). Cliffhangers are employed to ensure that the audience will return to see how the dilemma is resolved as the storyline unfolds; many television series adopt cliffhangers to provide more dramatic viewing experience by arousing suspense and curiosity. With this heavy use of cliffhangers in contemporary television series, high-NFC viewers are more likely to be cognitively motivated to watch the next episode in order to resolve their curiosity aroused by the ending of the previous episode. These viewers might be generally more likely to seek the coherence of resolved endings. Based on this idea, this study predicts that high-NFC viewers are more likely to engage in binge-watching than low-NFC counterparts. Furthermore, it is postulated that NFC plays a role as a moderator in the association between viewers' attitudes toward and the extent of their binge-watching.

H2. The association between negative attitudes toward binge-watching and binge-watching behavior is moderated by NFC.

3. Methods

3.1. Procedure and participants

We conducted an online survey with 1325 respondents aged 14–59 years nationwide in South Korea. We sampled the survey respondents from the online panel directory of a reliable research firm¹ with the largest number of panelists in East Asia (Macromill Embrain, 2018); as of May 2018, there are approximately 1.29 million people in the firm's directory. We sent an email invitation to 1300 potential respondents who met our study criteria (i.e., were between the ages of 14 and 59), and among 1300 invited potential respondents, 1115 completed the survey, a completion response rate of 84.1%. As our study focused on binge-watching behaviors, only respondents who reported binge-watching using TVs, PCs, or smart devices in the last three months were included in the analysis. In total, 714 respondents (64.0%) reported engaging in these behaviors, and these respondents comprised the sample for analysis.

3.2. Measures

3.2.1. Negative attitudes toward binge-watching

We measured negative attitudes toward binge-watching by assessing the respondents' negative feelings toward binge-watching. We asked five questions, including "I feel miserable after binge-watching," "I feel binge-watching is a waste of time," and "Binge-watching makes me put off my duties," scored on a 5-point scale ranging from (1) *strongly disagree* to (5) *strongly agree*. We then averaged the five items to construct an index ($M = 2.97$, $SD = .73$, Cronbach's $\alpha = .81$).

3.2.2. Binge-watching behavior

To measure respondents' binge-watching behavior, we developed measurement items based on three focus group interviews (one consisting of eight females in their teens, one consisting of seven females in their 20 s, and one consisting of eight males in their 30 s) we conducted in September 2015 to identify aspects of binge-watching behavior; Pena's (2015) binge-watching survey instruments were also partly adopted and modified for the study. We asked respondents to report their engagement in binge-watching during the last three months. It is not likely that individuals have an accurate recollection of exactly how many episodes of TV series they have been watching per sitting when asked in a survey, so the extent to which the viewers tend to binge-watch was measured. They rated their agreement with three statements: "I tend to watch multiple videos/episodes of a particular TV program in one sitting", "I tend to watch multiple videos/episodes of a particular TV program as quickly as possible", and "I sometimes happen to binge-watch a particular TV program." These were also scored on a 5-point scale ranging from (1) *strongly disagree* to (5) *strongly agree*, and we averaged these three items to form an index ($M = 3.41$, $SD = .69$, Cronbach's $\alpha = .63$).

3.2.3. Immediate gratification

We measured IG by assessing the respondents' impatience in resisting an immediate small reward for a later larger reward. We adopted and modified Ray and Najman's (1986) deferment of gratification scale for the study. The respondents were asked to rate how much they agree with three statements: "I will choose today's pleasure over tomorrow's happiness", "When I go shopping, I tend to buy more items than I originally planned", and "If I receive unexpected money, I will use it right away." These too were rated on a 5-point scale that ranged from (1) *strongly disagree* to (5) *strongly agree*, and were also averaged to form an IG index ($M = 3.14$, $SD = .68$, Cronbach's $\alpha = .60$).

3.2.4. Need for cognition

We measured NFC by assessing how much respondents enjoy effortful thinking. We adopted Thompson's (1995) NFC scale based on Petty et al. (1984) and modified it for this study. The respondents rated their agreement with eight statements, such as "I find a lot of satisfaction in deliberating hard and for long hours" or "I would prefer simple to complex problems (reverse-coded)", on a 5-point scale ranging from (1) *strongly disagree* to (5) *strongly agree*. We then averaged the eight items to form an NFC index ($M = 3.28$,

¹ The company showed its reliability by predicting 2016 general election winners with 73% accuracy while the average prediction rate of other research companies was 50%; (Kim, 2016).

Table 1
Descriptive statistics for demographic and other control variables.

	Frequency	%
<i>Gender</i>		
Male	340	47.62%
Female	374	52.38%
<i>Age</i>		
14–19	175	24.51%
20–29	368	51.54%
30–39	119	16.67%
40–49	22	3.08%
50–59	30	4.20%
<i>Education achievement</i>		
Middle school graduate or less	71	9.94%
High school graduate	89	12.46%
College student	211	29.55%
College graduate	274	38.38%
Graduate student	31	4.34%
Graduate degree	38	5.32%
<i>Monthly income</i>		
< US\$2000	95	13.31%
US\$2000–US\$4000	273	38.24%
US\$4000–US\$6000	190	26.61%
US\$6000–US\$8000	77	10.78%
> US\$8000	79	11.06%
Daily smartphone use time (min)	M = 376.56 (SD = 256.02)	
Daily nonlinear video watching time on TV (min)	M = 83.27 (SD = 93.01)	
Daily nonlinear video watching time on other media (min)	M = 119.45 (SD = 115.28)	
Number of videos on demand watched (daily)	M = 1.94 (SD = 1.69)	

Note: Monthly income was asked in Korean won but is reported here in U.S. dollars, N = 714.

SD = .57, Cronbach's α = .80).

3.2.5. Covariates

We controlled for sociodemographic variables such as gender, age, education achievement, and income for statistical adjustment. Because we were interested in video-watching behavior, we also controlled for media use variables such as self-reported time of smartphone use, time of non-real-time video watching on a TV set, time of non-real-time video watching using media other than TV, and number of VODs viewed. A summary of the descriptive statistics of these variables is shown in Table 1.

4. Results

Before we tested the research questions and hypotheses, we examined the zero-order correlations among the key study variables (Table 2). The results revealed that negative attitudes toward binge-watching were positively correlated with binge-watching

Table 2
Zero-order correlation matrix of variables.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1. Gender (Female = 1)	1											
2. Age	-.07	1										
3. Education	-.02	.42 ***	1									
4. Income	.06	.11 **	.14 ***	1								
5. Smartphone use time	.10 **	-.04	.01	-.02	1							
6. Nonlinear TV viewing	-.08 *	.05	-.06	-.06	.21 ***	1						
7. Nonlinear other media viewing	.03	-.06	-.08 *	-.09 *	.36 ***	.50 ***	1					
8. Number of VODs viewed	-.06	-.11 **	-.13 ***	-.09 *	.17 ***	.41 ***	.39 ***	1				
9. Negative attitude toward binge-watching	.00	-.02	-.02	-.05	-.02	.02	-.01	.04	1			
10. Immediate gratification	.05	-.05	-.07 *	.01	.04	.06	.12 **	.07	.16 ***	1		
11. Need for cognition	-.14 ***	-.08 *	-.02	.06	-.09 *	-.09 *	-.02	-.01	.02	.18 ***	1	
12. Binge-watching behavior	.01	-.16 ***	-.08 *	-.02	.00	.09 *	.15 ***	.13 ***	.08 *	.28 ***	.24 ***	1

* $p < .05$.

** $p < .01$.

*** $p < .001$. N = 714.

Table 3
Results of hierarchical ordinary least squares regressions on binge-watching behavior.

Variables	Model 1		Model 2	
	B (S.E)	Beta	B (S.E)	Beta
<i>Step 1. Control Variables</i>				
(Intercept)	3.37 (.16) ***		3.37 (.16) ***	
<i>Demographics</i>				
Gender	.01 (.05)	.01	.01 (.05)	.01
Age	-.01 (.00) ***	-.15	-.01 (.00) ***	-.15
Education	.00 (.02)	.01	.00 (.02)	.01
Income	.01 (.01)	.02	.01 (.01)	.02
<i>Media Use</i>				
Smartphone use time	-.01 (.01)	-.07	-.01 (.01)	-.07
Nonlinear TV viewing	.01 (.02)	.02	.01 (.02)	.02
Nonlinear other media viewing	.05 (.02) **	.13	.05 (.02) **	.13
Number of VODs viewed	.03 (.02)	.07	.03 (.02)	.07
R ²	.05 ***		.05 ***	
<i>Step 2. NABW</i>				
NABW	.07 (.03) *	.08	.07 (.03) *	.08
ΔR^2	.01 *		.01 *	
<i>Step 3 (Model 1). IG</i>				
IG	.26 (.04) ***	.26		
ΔR^2	.07 ***			
<i>Step 4 (Model 1). NABW \times IG</i>				
NABW \times IG	.11 (.04) *	.08		
ΔR^2	.01 *			
<i>Step 3 (Model 2). NFC</i>				
NFC			.30 (.04) ***	.24
ΔR^2			.06 ***	
<i>Step 4 (Model 2). NABW \times NFC</i>				
NABW \times NFC			-.02 (.05)	-.01
ΔR^2			.00	
Total R ²	.13 ***		.12 ***	

Note. NABW = negative attitude toward binge-watching; IG = immediate gratification; NFC = need for cognition.

* $p < .05$.

** $p < .01$.

*** $p < .001$. N = 714.

behavior ($r = .08$, $p < .05$), confirming a linear bivariate relationship between the independent and dependent variables. Both moderating variables, IG and NFC, were positively associated with binge-watching behavior. Negative attitudes toward binge-watching were uncorrelated with NFC but correlated with IG, and IG and NFC were also positively correlated with each other. After we determined that the variables of interest were mostly correlated, we proceeded to construct the main analyses.

To test the research questions and hypotheses, we conducted two hierarchical regression analyses (Table 3). We first entered the covariates that comprised the demographic and smartphone/media use variables, followed by the independent variable (negative attitude toward binge-watching), IG and NFC, and each of two interaction terms. The final two regression models were significantly predictive ($R^2 = .12$, $p < .001$; $R^2 = .13$, $p < .001$). As shown in Step 1 of the hierarchical regression models in Table 3, a lower age ($\beta = -.15$, $SE = .00$, $p < .001$) and more time spent watching video on media other than TV ($\beta = .13$, $SE = .02$, $p < .01$) significantly predicted a high level of binge-watching. Other sociodemographic and media use variables were not related to levels of binge-watching.

The first research question addressed how negative attitudes toward binge-watching would relate to binge-watching behavior. Table 3 shows that this association was significant and positive ($\beta = .08$, $SE = .03$, $p < .05$); that is, the more negative a respondent's attitudes toward binge-watching was, the more they binge-watched – the binge-watching behavior was shown to be attitude-discrepant.

The first hypothesis stated that there would be an interaction effect of negative attitudes toward binge-watching and immediate gratification on binge-watching behavior, and as Model 1 of Table 3 shows, this association was indeed significant and positive ($\beta = .08$, $SE = .04$, $p < .05$). Those who had a highly negative attitude toward binge-watching did more binge-watching among respondents who were high in immediate gratification; however, among the low IG respondents, those who had highly negative attitudes showed less binge-watching behavior (Fig. 1). Thus, Hypothesis 1 was supported.

The second hypothesis was that there would be a moderating effect of NFC on the relationship between negative attitudes toward

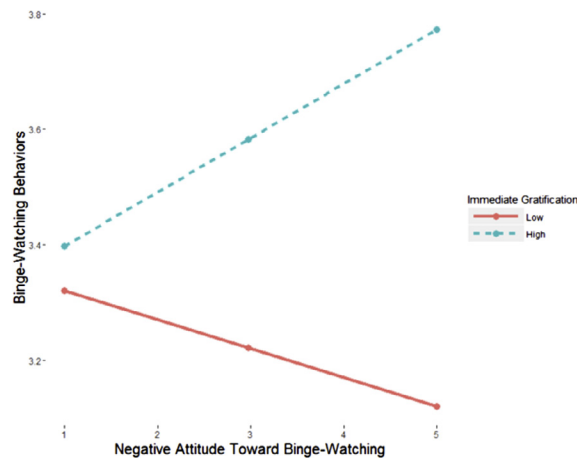


Fig. 1. Interaction effect of negative attitude toward binge-watching and immediate gratification on binge-watching behaviors.

binge-watching and binge-watching behavior, but as Model 2 of Table 3 shows, the interaction effect was not significant, and thus, Hypothesis 2 was rejected.

5. Discussion

This study broadens the understanding of binge-watching by (1) recognizing the inconsistency between attitudes toward binge-watching and actual binge-watching behaviors and (2) attempting to explain this inconsistency by adopting individual psychological traits. The first specific aim of this study was to examine the effect of negative attitudes toward binge-watching on actual binge-watching behavior, and the results showed that the more negatively someone perceived binge-watching, the more they tended to engage in it. The second specific aim of this study was to investigate the moderating effects of psychological traits, including IG and NFC, on negative attitudes toward binge-watching and binge-watching behavior, and the results confirmed an interaction effect of IG. Among those who were willing to wait for later larger rewards over immediate small ones, those who thought and felt negatively about binge-watching did not binge-watch as much as those who felt more positively; however, among those who could not resist instant small rewards, the more negatively they felt about binge-watching, the more they binge-watched. In contrast, individual NFC did not significantly moderate the relationship between a negative attitude toward binge-watching and binge-watching behavior. However, we found that NFC had a positive main effect on binge-watching behavior. IG also had a positive main effect on binge-watching behavior.

The elucidation of the relationship between negative attitudes toward binge-watching and binge-watching behaviors is a core contribution of this study; negative attitudes toward binge-watching were positively associated with the extent of binge-watching behavior. The attitude-behavior patterns of binge-watchers in this study did not fit people's general tendency to avoid behaviors they do not like or trust because they prefer consistency in their attitudes and behaviors (Ajzen, 1991; Ajzen and Fishbein, 1977; Tsfaty and Cappella, 2005). In this regard, this finding raises conceptual questions in terms of cognitive dissonance (Festinger, 1957). Binge-watchers did not attempt to resolve their cognitive dissonance, unlike in some previous studies on cognitive dissonance processes (e.g., Randles et al., 2015; Steele and Liu, 1983). As mentioned previously, these findings support the concern over the incongruent relationship between attitude and behavior in line with the research (e.g., Liska, 1974; Sherman and Gorkin, 1980).

So, why do binge-watchers who feel negatively about binge-watching continue to binge with an enduring inconsistency between their attitude and their behavior? One possible explanation is that binge-watching has already become a habitual behavior for some of the respondents. Habit is defined as a behavioral act performed without conscious thought (LaRose and Eastin, 2004), formed by repeating a certain action in certain circumstances (Oulasvirta et al., 2012; van Deursen et al., 2015). Because habitual behavior is automatically triggered by cues such as places, people, or preceding actions (Oulasvirta et al., 2012; van Deursen et al., 2015), it is difficult to discontinue our habits as long as we live in environments composed of those cues. In accordance with this rationale, it might not be easy for binge-watchers to discontinue binge-watching behavior when they live in technology-driven environments filled with smart media and services such as Netflix and VODs that they can easily use to binge-watch on proximate media.

With regards to psychological traits, this study hypothesized that the traits of IG and NFC would moderate the relationship between negative attitudes toward binge-watching and actual binge-watching behavior. In the interaction of negative attitude and IG, we found an interesting pattern: among those who were high in immediate gratification, a negative attitude toward binge-watching was positively associated with binge-watching behavior (Fig. 1). In other words, heavy binge-watchers who were potentially impatient with high levels of IG tended to have negative perceptions of binge-watching.

A possible explanation is that this negative attitude toward binge-watching might form as a result of severe binge-watching, with the thinking being that binge-watching is sometimes regarded as a “guilty” pleasure (Panek, 2013; Ramsay, 2013). Binge-watchers with high IG may feel guilty about binge-watching, resulting in their developing negative attitudes toward binge-watching. However, they do not have patience, which would keep them from binge-watching, therefore displaying a reverse association. In contrast,

binge-watchers with low levels of IG showed less binge-watching behavior because they had more negative attitudes toward the activity. This research reinforces the argument that individuals with low self-control tend to seek immediate over long-term gratification (Babin and Darden, 1995; Mischel et al., 1972). That is, individuals with low IG can resist the temptation to continue binge-watching.

If we accept our interpretation that this negative attitude of those who are susceptible to immediate gratification stems from regret or guilt following extreme binge-watching behavior, the behavior can be seen as addictive or at least maladaptive. A failure of self-regulation has been found to be an important predictor of excessive and addictive media use (LaRose and Eastin, 2004; Kwon et al., 2013). Because the choice of immediate gratification is related to a lack of self-regulation or an impulsive personality (Baumeister and Heatherton, 1996; Wulfert et al., 2002), the intensive binge-watching by those in our study with high IG, even with regret, can potentially be seen as addictive. Future studies should investigate the conditions and addictive nature of binge-watching.

Additionally, we found that there was a main effect of IG on binge-watching behavior ($\beta = .26$, $SE = .04$, $p < .001$); respondents who preferred immediate gratification to later reward tended to be heavy binge-watchers. This finding is in line with recent research on self-control and media use; media use is found to be hard to resist and susceptible to self-control failure (Hofmann et al., 2012; Reinecke and Hofmann, 2016), and binge-watching is not an exception according to this study.

Lastly, the interaction effect of negative attitudes toward binge-watching and NFC on binge-watching behavior was not significant, and we only found a main effect of NFC on binge-watching behavior ($\beta = .24$, $SE = .04$, $p < .001$), specifically, high NFC predicted more binge-watching. This finding clearly demonstrates that individuals with NFC are likely to be more curious about the issue-relevant information they derive from their program contents. Given that individuals with high NFC tend to be more influenced and motivated by issue-relevant information, performance on problem-solving tasks, and a quest for comprehension (Cacioppo and Petty, 1982; Petty et al., 1983; Nair and Ramnarayan, 2000), it is reasonable for high-NFC TV viewers to binge-watch more easily than viewers with low NFC. When binge-watchers with high NFC binge-watch, because they watch whole episodes back to back, they do not have to remain curious for long and can immediately consume the full series storyline; these viewers cannot help watching long strings of episodes consecutively.

A limitation of this current study is the absence of categorizations of binge-watching; that is, we conducted the study without considering individual binge-watching types. Binge-watchers can binge-watch in a variety of ways: Some are likely to binge-watch just to kill time or to enjoy watching episodes of a show that has already ended. Other binge-watchers actually want to watch their shows on linearly scheduled television, but as their daily life patterns do not allow for watching regularly scheduled shows, they binge-watch to follow up on the episodes they missed. Taken together, binge-watchers may have different motivations for their binge-watching behaviors depending on their binge type. Future research may explore the findings of the current study by exploring the relationship between motivations for binge-watching and the variables examined in this study. Another limitation is that we did not consider psychological traits in terms of addiction properties. As discussed above, binge-watching itself could be linked to individuals' addictive traits including anxiety sensitivity. The effects of addictive traits on binge-watching may be more serious and problematic than those of psychological traits, and future research may pay attention to addictive traits and test models that include these traits. According to previous research (Hoffmann et al., 2017), self-control is a possible moderator of the effects of media use. As we mentioned earlier, immediate gratification is highly likely to be associated with self-control; future research should study the relationship between IG and binge-watching behavior as moderated by self-control. In a similar vein, other theoretical frameworks may be considered aside from the relationship between the negative attitudes toward binge-watching and the extent of binge-watching, considering that the bivariate relationship in the current study between negative attitudes toward binge-watching and the extent of binge-watching seems relatively weak ($r = .08$, $p < .05$). Other aspects such as motivations from the uses and gratification theory or lack of self-control in the context of addictive usage might be considered. A more integrative review of these constructs is warranted in future studies. In doing so, future research could strengthen the applicability and generalizability of the results of the present study. Lastly, some measurements showed low reliability scores, indicating the possibility of weak face validity.

6. Author disclosure statement

No competing financial interests exist for authors.

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.tele.2018.07.001>.

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