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The effect of personality traits on over-the-top service use and binge-watching

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ABSTRACT

With the freedom to consume content on preferred devices at any time as long as there is an Internet connection, the growing demand for over-the-top (OTT) services is evident. In conjunction with the rise of OTT services, binge-watching has become a prevalent behavior. In this research, we explore whether personality traits including the Big Five and need for cognition wield an effect on OTT use and binge-watching. We used a large, diverse, population representative sample from South Korea to investigate this topic. Results indicated that openness to experience and need for cognition were positively related to OTT use. Openness to experience, emotional stability, conscientiousness, and need for cognition had a negative association with binge-watching. When the sample was split by OTT frequency, the binge-watching effects were obtained exclusively for daily OTT users. For non-daily OTT users, most of the personality traits did not exert an effect on binge-watching. Implications of the current findings as well as limitations and future research are presented.

1. Introduction

A common repertoire for consuming entertainment content nowadays is accessing over-the-top (OTT) media services such as Netflix, Amazon Prime Video, and Disney+. The global OTT market was valued at 101.42 billion U.S. dollars in 2020 and will exhibit a compound growth rate of 16 % each year until 2026 (Mordor Intelligence, 2022). In the U.S., close to 80 % have a subscription to at least one streaming service (Mulla, 2022), demonstrating the consumer's appetite for OTT content. With the rapid growth of OTT adoption, binge-watching has become a lexicon and a habitual norm among users (Viens & Farrar, 2021). In the OTT context, binge-watching is defined as consuming two or more episodes in a single sitting (Silverman & Ryalls, 2016). Granow et al. (2018) defined this concept as an intense and consecutive consumption of a series in one sitting. Among OTT consumers, 75 % have binge-watched some content in the past (Deloitte, 2017). Indeed, OTT use and binge-watching have become relatively common routines among consumers. However, compared to their popularity and adoption rate, research on the psychological characteristics related to such behavior remains elusive.

Extensive behavioral variations within this technological landscape

have emerged primarily due to structural considerations and psychological characteristics. According to theories of innovative behavior (Agarwal & Prasad, 1998; Rogers, 2003), individuals are inherently different in their willingness to engage in practices that are technology-driven (Agarwal & Prasad, 1998). For that matter, we contend that differentiation in OTT use and binge-watching are, to a certain extent, dictated by personality traits (i.e., the set of behaviors, cognitions, and emotions that arise from biological and environmental factors; Matthews et al. [2003]). In this research, we examine the Big Five dimensional traits of openness to experience, extraversion, emotional stability, agreeableness, and conscientiousness. In addition, need for cognition, a personality trait that reflects the inclination to be involved in effortful and thoughtful activities, is examined in conjunction with the Big Five.

The present study aims to provide preliminary evidence that personality traits including openness to experience, extraversion, emotional stability, agreeableness, conscientiousness, and need for cognition are related to OTT use and binge-watching. Moreover, given that the effects on binge-watching can be subtle and idiosyncratic, we investigate whether daily versus non-daily use of OTT has an impact on the relationship between personality traits and binge-watching. We use a large, diverse, population-representative sample to investigate our research

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question. Theoretical and practical implications based on our findings are discussed.

2. Literature review

2.1. Over-the-top service trends

Binge-watching has always existed even when traditional media platforms such as television and radio were the mode to consume content. However, the accentuation of binge-watching has been brought on by the arrival of over-the-top (OTT) services. OTT is defined as a service that provides a variety of media content via the internet, including variety shows, original series, movies, documentaries, and music content (Kim et al., 2017; Sujata et al., 2015). Hence, OTT services can bypass cable, broadcast, and satellite platforms, which have typically controlled the distribution of content, by leveraging the infrastructure deployed by network operators (Kim et al., 2017). The dominant players in this market include Netflix, Disney+, YouTube, Amazon Prime Video, and Hulu. Competition in this market has become intense with rivals attempting to offer popular (e.g., Seinfeld and Friends) and exclusive (e. g., Squid Game on Netflix and Ted Lasso on Apple TV+) content. Users can stream these contents as long as an Internet connection is available on (Internet-connected) devices such as PCs, tablet PCs, smartphones, set-top boxes, and game consoles. One of the major benefits that OTT services offer is that, in most cases, advertisements can be skipped. So far, most video streaming occurs through mobile or TV application platforms, accounting for the majority of the streaming users (Mordor Intelligence, 2022).

Combined with the technological advancements of OTT, there are a plethora of prime benefits for consumers because of the advent of OTT services. Each service can cater to consumers' demands by analyzing their preferences to get "better" content choices (Kwak et al., 2021). Using Big Data that is deployed by OTT services, personalized recommendations allow consumers to make smarter decisions in terms of their content selection (Kwon et al., 2021). The psychological benefits of OTT services have also been well-documented. According to Guo (2022), among the numerous reasons, consumers primarily use OTT services because of perceived enjoyment, perceived controllability, perceived compatibility, and social engagement. Chang and Chang (2020) found that perceived interactivity and perceived value are what generate satisfaction for OTT services. As corroborated by research, the use of OTT services is influenced by psychological characteristics to a certain extent (Nagaraj et al., 2021; Sujata et al., 2015). Extending upon these research outcomes, we proffer that the Big Five personality traits and need for cognition also propel the use of OTT services.

2.2. Binge-watching trends

The proliferation of binge-watching - in which other terms include binge viewing or marathon viewing - has increased with the widespread adoption of OTT. According to industry statistics, 70 % of Americans aged 30 to 44 have binge-watched an original series or movies via OTT services (Soocial, 2023). Of millennials and members of Generation Z, 90 % have prior experience with binge-watching. Notably, the COVID-19 lockdown enforced restrictions on users' routine activities and caused them to allocate a significant duration of their day engrossed in content streaming through OTT platforms (Rahman & Arif, 2021). In the OTT landscape, binge-watching is particularly promoted because content creators opt to release a complete series simultaneously. In such settings, users can consume multiple episodes (or the whole series) thanks to its availability. For instance, Squid Game, the most popular series ever on Netflix consists of nine episodes, taking eight hours and five minutes to finish the series in one sitting (Bingeclock, 2023). Reports (e.g., Lui, 2021) have shown that users - upon word-of-mouth on social media playing a substantial role - binge-watched the series.

While there is no consensus, the most common and adopted

definition of binge-watching is consuming two or more episodes in one sitting (Silverman & Ryalls, 2016). Other concepts that accompany binge-watching are generated by the stimulation of "engagement," "enjoyment," "devotion," "need to know," "transportation," and "flow" (Castro et al., 2021; Ort et al., 2021; Panda & Pandey, 2017). When such feelings are aroused during a particular session, users, on average, will continue to watch additional content (Panda & Pandey, 2017). Another way to conceptualize binge-watching is by objectively capturing the *amount of time* and *frequency* that binge-watching happens (Walton-Pattison et al., 2018). In Walton-Pattison et al. (2018), questions such as "how many days did you watch more than two episodes in the same sitting" and "thinking of the last time you watched more than two episodes, how many hours did you spend" were used reflect binge-watching behavior. In a similar vein, this research adopts this conceptualization.

The literature concurs that binge-watching is influenced by the psychological characteristics of an individual (Castro et al., 2021; Ort et al., 2021; Panda & Pandey, 2017). The majority of research on bingewatching has focused on dynamic and narrow psychological traits. For instance, it is suggested that a high degree of impulsiveness accompanied by low self-regulation increases the penchant to binge-watch (Riddle et al., 2018). The pursuit of sensation-seeking and automaticity are also characteristics that drive high binge-watching frequency (Shim & Kim, 2018; Walton-Pattison et al., 2018). Despite what prior research has found, there is still a limited understanding of what type of psychological characteristics influence binge-watching. Furthermore, research tends to employ dynamic individual differences as a way to probe binge-watching (Shim & Kim, 2018; Walton-Pattison et al., 2018). Differentiating from prior research, we examine the extent to which broad, lifelong, and stable personality traits (i.e., Big Five and need for cognition) exert an effect on binge-watching behavior.

2.3. Personality traits in relation to technology use

Given that OTT use and binge-watching on OTT services are within the domains of information technology use, we must first look at this literature for theorization. Theories on innovative behavior overwhelmingly support the notion that using technology is an individual choice that is determined by individual differences (Agarwal & Prasad, 1998; Rogers, 2003). Among individual differences, we examine the influence of the Big Five dimensional traits of extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience (Digman, 1997) along with need for cognition (Cacioppo & Petty, 1982). Individuals who are extraverted tend to be outgoing and energized in the company of others. Those who exhibit agreeableness tend to show signs of trust, altruism, and affection. Conscientiousness represents a person's tendency to be self-regulated, organized, and detailed-oriented. Emotional stability is affiliated with being relaxed and not being sad and worried. Openness to experience emphasizes creativity, artistic ability, and intellectual ability compared to routine interests. Need for cognition refers to the individuals' tendencies to engage in and enjoy effortful thought. According to Sadowski and Cogburn (1997), need for cognition is a unique personality trait that has moderate variance overlap with openness to experience, emotional stability, and conscientiousness.

The body of literature that links personality traits and technology use demonstrates a consistent and important relationship (e.g., Correa et al., 2010; Kim et al., 2015). The introduction of technology has drastically altered the way individuals live, work, and communicate with others. Substantial amounts of information can be obtained and utilized in a much easier and cost-effective manner due to technologies. However, differences can be observed in individuals' decisions to employ or abstain from using technology, and these distinctions in technological behavioral patterns may stem from psychological traits (Agarwal & Prasad, 1998; Rogers, 2003).

Among the psychological characteristics, personality traits have emerged as powerful and consistent factors that explain general technology use. For example, personality traits have explained significant amounts of variance for Internet use (Landers & Lounsbury, 2006), smartphone use (Kim et al., 2015), social media use (Correa et al., 2010), virtual reality interaction (Kober & Neuper, 2013), electronic learning (del Barrio-García et al., 2015), and overall technology acceptance (Devaraj et al., 2008). In these studies, depending on the technology type, different personality traits have emerged as meaningful factors that exert an influence. In Landers and Lounsbury (2006), Internet use was negatively related to agreeableness, conscientiousness, and extraversion. In Correa et al. (2010), social media was used more frequently by those who are extraverted, neurotic (i.e., emotional instability), and open to experience. In del Barrio-García et al. (2015), need for cognition was crucial for adopting electronic learning. Building on these findings, we hypothesize that personality traits will be related to OTT use.

On top of these findings for general purpose use, personality traits influence the way individuals use specific functions for a technology. For instance, e-government portal use was used more repeatedly by those who are extraverted, conscientious, and open to experience (Venkatesh et al., 2014). Khan et al. (2019) found that conscientiousness and agreeableness were related to mobile payment adoption. Kim et al. (2015) observed that conscientious individuals are less likely to use e-commerce smartphone applications. Moreover, introverted individuals tend to use literacy smartphone applications. In a similar vein to these studies that focus on mapping personality traits with specific technology use, we conjecture that personality traits will be related to OTT use and binge-watching.

2.4. Personality traits in relation to OTT use

Personality traits have been well-documented as consistent predictors of individuals' behavior towards technology-driven products and services (e.g., Correa et al., 2010; Devaraj et al., 2008). In line with these findings, we propose that personality traits including the Big Five and need for cognition influence OTT use to a certain extent.

Because those who are open to experience are generally curious and strive for new stimulations (Digman, 1997), they may attempt to seek rich and diverse content on OTT services. Based on the literature, contradictory logic can be presumed with respect to the relationship between extraversion and OTT use. On one hand, extraverts may tend to avoid OTT use given that accessing OTT services equate to lesser amounts of social encounters (Charlton & Danforth, 2010). On another hand, watching content on OTT services allows extraverts to strike a conversation about the content with their family and friends (Peris et al., 2002). As individuals who are conscientious exhibit tendencies to be disciplined and deliberate (Digman, 1997), OTT use can be an impediment for achieving thoroughness and reliability in their goals and outcomes. Following research that demonstrates a lack of influence of emotional stability and agreeableness on information and communication technology use (Kim et al., 2015), we posit that these personality traits are not related to OTT use. Such traits, by and large, are not associated with technology use in a general context but only exert an influence with specific functions of technology use (Correa et al., 2010).

We contend that those with a high need for cognition are less likely to use OTT services. Accessing OTT services is a medium source for entertainment (i.e., sensation seeking) and can be a deterrent for these individuals who have an intrinsic motivation to engage in effortful cognitive endeavors (Kaynar & Amichai-Hamburger, 2008). When individuals value debate, intellectual tasks, idea sharing, and problemsolving, their priority for OTT use tends to be minimal (Cacioppo & Petty, 1982). For that matter, they will show self-control to steer clear of OTT services.

2.5. Personality traits in relation to binge-watching

Binge-watching, which involves watching several episodes in one sitting, produces dopamine in the brain that generates natural and

internal rewards for engagement, pleasure, and relaxation (Flayelle et al., 2020). However, at the same time, it is associated with monotonous behavior, cognitive decline, behavioral addiction, physical inactivity, and sleep issues (Jindal, 2020; Shim et al., 2018). Moreover, binge-watching is a highly psychological behavior that is driven by mood regulation via individual self-control (Sigre-Leirós et al., 2022). Such underlying mechanisms make it likely that individual differences such as personality traits exert a substantial effect on binge-watching.

Although those who are open to experience might experiment with OTT services, we posit that they are less likely to binge-watch. This is because watching multiple episodes is a demanding activity that requires time and tenacity. Compared to the repetitive task that bingewatching is characterized by, these individuals will seek new, curious, creative, and original tasks (Digman, 1997). Following the predominant trend in literature (Correa et al., 2010; Kim et al., 2015), extraverts are less expected to binge-watch because it interrupts the opportunity to interact with others. A caveat is that extraverts might binge-watch if the content is consumed in social settings (Tang et al., 2013). However, in general, binge-watching is a solitary activity for most individuals (Soocial, 2023), making it less appealing for extraverts. For emotional stability, emotionally unstable individuals are inclined to binge-watch content on OTT services. The rationale is that binge-watching is an ideal escape route when individuals feel anxiety, anger, lonely, and depressed (Digman, 1997). Excessive media use has been documented across the literature, supporting the justification (Alfonsi et al., 2023). Hypothetically, those who are conscientious will be less likely to bingewatch. Addictive behaviors with respect to technology use are generally avoided by these individuals (Kim et al., 2015). Succinctly stated, bingewatching disrupts the ability to achieve goals by preventing individuals from being responsible, organized, and hard-working. Similarly, need for cognition is expected to have a negative relationship with bingewatching. Binge-watching is a low cognitive effort activity that those with high need for cognition would avoid (Shim et al., 2018). Simply, for these individuals, binge-watching can be regarded as passive and less mentally stimulating than other activities. As agreeableness is associated with manifesting kindness, trust, sympathy, and cooperation, these characteristics would likely have no connection to binge-watching.

The influence of personality traits on binge-watching might not be a straightforward relationship; rather, this relationship might be moderated by the frequency of binge-watching (Shim et al., 2018). For that matter, as a proxy for measuring frequency, this research examines whether binge-watching occurs on a daily versus non-daily basis. Essentially, we are able to scrutinize the nuances with regard to the relationship between personality traits and binge-watching by considering both time and frequency. Both time and frequency are important indicators of behavior addiction (Cassin & von Ranson, 2007; Fillmore & Jude, 2011). As such, we can uncover the extent to which addiction acts as an intervening factor between personality traits and binge-watching.

We hypothesize that personality traits have a pronounced effect on binge-watching for those who binge-watch daily. The literature demonstrates that users who are addicted to binge-watching display symptoms of loneliness, reduced self-control, and impulsiveness (Sung et al., 2018). Health consequences include an unhealthy diet, sleep problems, and less physical activities (Flayelle et al., 2020). In essence, personality traits play a more dominant role when addiction arises as a critical factor (Kayiş et al., 2016). A meta-analysis found that media and internet addiction are associated with reduced openness to experience, extraversion, emotional stability, agreeableness, conscientiousness, and need for cognition (Kayiş et al., 2016). Deducing from this, we expect to find significant and directional findings that are in line with the general binge-watching effects. On the other hand, we expect personality traits to have a close to null effect on binge-watching for non-daily users.

3. Methods

3.1. Sample

We used secondary data provided by the Korean Information Society Development Institute.¹ The survey is a panel study that relies on a multistage probability design with systematic sampling to obtain a sample frame that resembles the Korean population. The 2020 survey exclusively contained data that was of interest and was used for analysis. The original dataset contained a sample size of 10,154, but this size was reduced to 6780 after accounting for users who did not complete the psychological survey questions (i.e., personality traits questionnaires). This dataset is more complete than prior studies which tend to rely on small convenience or college student samples. The sample was 54.9 % female. The average age of the sample was 52.5 years old. The bulk of the sample had either an undergraduate (38.3%) or a high school (35.3 %) degree. An extensive range of income earners was included in the sample with the three dominant groups being no income (31.1 %), \$24,000-35,999 (20.6 %), and \$12,000-23,999 (18.5 %). The sample consisted of mostly married individuals (65.1 %). Table 1 provides a more complete picture of the sample.

3.2. Measures

The first dependent variable, *OTT use*, was measured as a dichotomous variable (1 = use OTT; 0 = do not use OTT). OTT use encompasses using OTT platforms such as Netflix, YouTube, Disney+, Hulu, and Apple TV. The second dependent variable, *binge-watching*, is also a dichotomous variable that was formed by aggregating those who watch

Table 1

User profile.

Characteristics	Frequency	Percent (%)
Gender		
Male	3056	45.1
Female	3724	54.9
Age		
10–19	250	3.7
20–29	832	12.3
30–39	522	7.7
40–49	1297	19.1
50–59	1448	21.4
60–69	1037	15.3
> 69	1394	20.6
Education (completed)		
Elementary school	1061	15.6
Middle school	632	9.3
High school	2391	35.3
Undergraduate	2600	38.3
Graduate (Masters, Ph.D.)	96	1.4
Income (\$)		
No income	2110	31.1
<6000	550	8.1
6000-11,999	471	6.9
12,000-23,999	1255	18.5
24,000-35,999	1398	20.6
36,000-47,999	608	9.0
48,000-59,999	209	3.1
>60,000	179	2.6
Marriage		
Married	4413	65.1
Not married	2367	34.9

Note. Descriptive statistics is for OTT use (N = 6780); Income was converted from Korean Won to US dollars.

more than two episodes of OTT content in a single viewing session (1 = watch two episodes or more of OTT content in a single viewing session; <math>0 = watch less than two episodes of OTT content in a single viewing session). Silverman and Ryalls (2016) postulated that binge-watching should constitute at least watching two episodes of some content. The data provided the hours and minutes that users watch OTT content in one sitting. As such, we set up the proxy variable such that watching two episodes is equivalent to watching two hours of OTT. In this sample, the average viewing time in one sitting was 44 min (<math>SD = 45.7).

Personality was adopted from the Ten-Item Personality Inventory (TIPI) which is comprised of two items for each personality trait (Gosling et al., 2003). TIPI is a brief version of the Big Five that is available for convenient administration and has become a widely influential tool in personality research. Users reported their level of agreement with the personality traits on a 1 to 5 scale. Higher values indicate a stronger tendency to be *open to experience, extraverted, emotionally stable, agreeable,* and *conscientious.* Each personality trait had a modest intra-class correlation (0.52 for openness to experience, 0.30 for extraversion, 0.49 for emotional stability, 0.41 for agreeableness, and 0.53 for conscientiousness). The two items for each personality trait were summed and then standardized.

A six-item scale of *need for cognition* was adopted from Lins de Holanda Coelho et al. (2020). Coelho and colleagues developed a very short scale that draws from the original 34-item version (Cacioppo & Petty, 1982) and the shortened 18-item version (Cacioppo et al., 1984) of the need for cognition scale to enhance practicality. In the very short scale, four items are positively-worded and two items are negatively-worded (which are subsequently reversed). The scale was measured on a 1 to 4 scale whereby 4 represents extremely characteristic and 1 represents extremely uncharacteristic. A factor score was computed for need for cognition. The coefficient alpha was 0.73.

A wide variety of control variables were considered in this research. Across empirical research, the following control variables have influenced new media use (Dhir & Tsai, 2017; Shin & Park, 2021; Wang et al., 2012), compelling the need to isolate the effects that Big Five personality traits and need for cognition have on OTT use and binge-watching. Socio-demographic variables included *gender* (1 = male; 0 = female), age (in years, centered at 52.45), completed education (-3 = elementary school; -2 = middle school; -1 = high school; 0 = undergraduate; 1 = graduate), income (0 = no income; 1 \leq \$6000; 2 = \$6000-11,999; 3 = \$12,000-23,999; 4 = \$24,000-35,999; 5 = \$36,000-47,999; 6 = \$48,000-59,999; 7 \geq \$60,000), marriage (1 = married; 0 = not married).

IT diversity entails the different types of information systems respondents use other than OTT. Those who are digitally literate and have familiarity with technologies are likely to experiment with other information systems (Brandtweiner et al., 2010). Each information system was measured as whether or not it was used (1 = use; 0 = do not use). The list of information systems includes digital news, digital music, digital games, social media, smartphones, tablets, wearable technology, instant messaging, blog, cloud, and Internet communities. We operationalized this variable by computing the sum of the dummy variables (M = 4.0, SD = 2.4). Afterward, this variable was standardized.

One additional control variable was used in the binge-watch regression models. *OTT frequency* measures the number of times a user accesses OTT services. There were eight levels to this variable (0 = every day several times; -1 = once every day; -2 = 5 to 6 times per week; -3 = 3 to 4 times per week; -4 = 1 to 2 times per week; -5 = 1 to 3 times per month; -6 = once every few months; -7 = once a year). The average for this variable was 5.9 (*SD* = 1.8) on the original scale (i.e., approximately 5 to 6 times per week). This variable was also standardized. All variables were coded in such way that the constant in the regression analysis refers to the effect size when the main independent and control variables are equal to zero (i.e., the largest subsection of the data).

¹ Data can be downloaded from https://stat.kisdi.re.kr/kor/contents/Cont entsList.html.

3.3. Analytic approach

Logistic regression was applied in all cases for the analyses. The total sample (N = 6780) was used for OTT use. Those who were OTT users were used as the sample size for binge-watching (N = 4325). OTT use and binge-watching were first regressed by the control variables (Model 1 and Model 4). We undertook a hierarchical approach by adding personality traits (Model 2 and Model 5) and then need for cognition (Model 3 and Model 6). As part of the post-hoc analysis, we compared daily and non-daily users of OTT services. Within OTT frequency, values corresponding to 0 and -1 were grouped as daily users whereas the remaining (-2 to -7) were grouped as non-daily users. Models 7–12 provide the estimates for binge-watching. We reported the odds ratio and the confidence intervals to emphasize the effect sizes as suggested in recent psychology literature (Kim et al., 2015).

4. Results

Table 2 provides the bivariate correlations among the study variables. Most of the variables had close to null, small, or moderate correlations. OTT use was highly correlated with age and education. Bingewatching did not have any substantial relationship with the other variables. The intercorrelations among personality traits and need for cognition were mostly moderate, with more open individuals tending to be less conscientious and extraverted individuals tending to be more agreeable.

Table 3 describes the results with regard to OTT use. We report the odds ratio for the significant findings. According to Model 1, OTT use was reduced by 4 % for every unit increase in age. Those who are more educated and married increased the probability of OTT use by 32 % and 24 %, respectively. OTT use was heavily influenced by IT diversity, boosting the average by 448 %. Model 2 revealed that only openness to experience had a significant relationship with OTT use. One standard deviation increase in openness to experience is associated with a 10 % higher likelihood of OTT use. Model 3 shows NFC propels a 28 % increase in OTT use.

Filtering out OTT users, Table 4 presents the results for bingewatching. In Model 4, binge-watching was largely not influenced by socio-demographics except for age. Those who are younger had a higher propensity to binge-watch some content (4 %). OTT frequency increases the likelihood of binge-watching by 38 % among users. As shown in Model 5, three personality traits demonstrated significance in explaining binge-watching. Those who with lesser openness to experience, emotional stability, and conscientiousness were more likely to bingewatch by 19 %, 13 %, and 13 %, respectively. Model 6 shows that one standard deviation increase in need for cognition is associated with a 22 % decrease in binge-watching.

As displayed in Table 5, an interesting finding was produced when we split the sample by OTT frequency. Models 7–9, which are related to daily binge-watching, exhibit similar trends as shown in models 4–6. Those with higher levels of openness to experience, emotional stability, and conscientiousness tended to binge-watch less, showing a 21 %, 16 %, and 14 % decrease, respectively. Need for cognition also had a negative association with binge-watching (23 % decrease). On the contrary, non-daily binge-watchers produced widely different results (Models 10–12). None of the personality traits from the Big Five had a significant relationship with binge-watching. Need for cognition was a consistent factor whereby it decreased binge-watching, on average, by 20 %.

5. Discussion

5.1. Summary

The objective of this research was to examine the effects of personality traits on OTT use and binge-watching. We investigated such .01

orrelatio	ins among study varial	oles.														
		1	2	3	4	5	9	7	8	6	10	11	12	13	14	15
1	Gender	1														
2	Age	-0.06*	1													
з	Education	0.17*	-0.71^{*}	1												
4	Income	0.42*	-0.08^{*}	0.33^{*}	1											
ъ	Marriage	0.07*	0.37^{*}	-0.05^{*}	0.14^{*}	1										
9	IT diversity	0.10^{*}	-0.70^{*}	0.64^{*}	0.25^{*}	-0.17	1									
7	Openness	0.09*	-0.26^{*}	0.24^{*}	0.08*	-0.05	0.22^{*}	1								
8	Extraversion	0.05*	-0.14^{*}	0.12^{*}	0.05*	-0.03	0.12^{*}	0.36^{*}	1							
6	Emotional stability	0.02	-0.01	0.01	0.01	-0.00	0.01	0.10^{*}	0.22^{*}	1						
10	Agreeableness	0.05*	-0.09*	0.08*	0.03	0.01	0.07*	0.27*	0.40^{*}	0.39^{*}	1					
11	Conscientiousness	-0.02	0.17*	-0.14^{*}	-0.01	0.04*	-0.13*	-0.52*	-0.20*	-0.06^{*}	-0.17*	1				
12	Need for cognition	0.12^{*}	-0.30^{*}	0.34^{*}	0.18^{*}	-0.01	0.35*	0.19^{*}	0.07*	0.01	0.08^{*}	-0.11*	1			
13	OTT frequency	0.02	-0.19^{*}	0.14^{*}	-0.07*	-0.16^{*}	•0.09	-0.00	-0.02	-0.04*	-0.01	-0.02	-0.01	1		
14	OTT use	0.09*	-0.61^{*}	0.59*	0.21^{*}	-0.09*	0.64^{*}	0.21^{*}	0.10^{*}	0.00	0.07*	-0.13*	0.32^{*}	I	1	
15	Binge-watching	-0.02	-0.16^{*}	0.07*	-0.06*	-0.12*	0.07*	-0.03	-0.01	-0.06*	-0.03	-0.03	-0.07	0.16^{*}	I	1
ote. The	total sample was used	for computat	ion except fo	r OTT frequei	ncy and binge	e-watching (D	I = 4325).									Ì

Fable :

Table 3

Logistic regression model for OTT use.

E	Exp β (95 % CI)		
		$\exp \rho$ (95 % CI)	Exp β (95 % CI)
Intercept 3	3.82** (3.02,	3.82** (3.01,	3.83** (3.00,
4	4.83)	4.84)	4.85)
Gender (male) 1	1.10 (0.93, 1.31)	1.09 (0.92, 1.30)	1.07 (0.90, 1.27)
Age 0	0.96** (0.95,	0.96** (0.95,	0.96** (0.95,
C	0.97)	0.97)	0.97)
Education 1	1.32** (1.20,	1.32** (1.19,	1.28** (1.16,
1	1.47)	1.46)	1.42)
Income 0	0.99 (0.95, 1.04)	1.00 (0.95, 1.04)	0.99 (0.95, 1.04)
Marriage 1	1.24* (1.03,	1.23* (1.02,	1.22* (1.01,
1	1.50)	1.49)	1.48)
IT diversity 5	5.48** (4.76,	5.43** (4.72,	5.16** (4.48,
6	6.31)	6.26)	5.94)
Openness to		1.10* (1.00,	1.07 (0.97, 1.17)
experience		1.20)	
Extraversion		0.96 (0.88, 1.04)	0.97 (0.89, 1.05)
Emotional stability		0.97 (0.90, 1.05)	0.98 (0.91, 1.06)
Agreeableness		1.03 (0.94, 1.12)	1.02 (0.93, 1.11)
Conscientiousness		0.98 (0.90, 1.07)	0.98 (0.90, 1.07)
Need for cognition			1.28** (1.18,
			1.39)
-2 log L 4	4770.66	4763.29	4722.29
$Cox \& Snell R^2$ 0	0.45	0.46	0.46
Nagelkerke <i>R</i> ² 0	0.62	0.62	0.63

Note. N = 6780.

p < .01.

* *p* < .05.

Table 4

Logistic regression model for binge-watching.

Predictors	Model 4 Model 5 Mod		Model 6
	Exp <i>β</i> (95 % CI)	Exp <i>β</i> (95 % CI)	Exp <i>β</i> (95 % CI)
Intercept	0.01** (0.00,	0.01** (0.00,	0.01** (0.00,
-	0.02)	0.02)	0.02)
Gender (male)	0.83 (0.66, 1.04)	0.86 (0.69, 1.08)	0.88 (0.70, 1.11)
Age	0.96** (0.95,	0.96** (0.95,	0.97** (0.95,
	0.98)	0.98)	0.98)
Education	1.02 (0.83, 1.24)	1.04 (0.85, 1.28)	1.07 (0.87, 1.32)
Income	1.01 (0.95, 1.07)	1.01 (0.95, 1.07)	1.01 (0.95, 1.07)
Marriage	1.17 (0.83, 1.66)	1.15 (0.82, 1.63)	1.14 (0.81, 1.62)
IT diversity	1.01 (0.88, 1.17)	1.02 (0.88, 1.18)	1.04 (0.90, 1.21)
OTT frequency	1.38** (1.29,	1.37** (1.28,	1.36** (1.26,
	1.49)	1.47)	1.46)
Openness to		0.81** (0.71,	0.83** (0.73,
experience		0.92)	0.95)
Extraversion		1.01 (0.89, 1.14)	1.00 (0.89, 1.13)
Emotional stability		0.87* (0.77,	0.87* (0.78,
		0.97)	0.98)
Agreeableness		0.98 (0.87, 1.12)	0.99 (0.87, 1.12)
Conscientiousness		0.87* (0.77,	0.86* (0.76,
		0.98)	0.98)
Need for cognition			0.78** (0.69,
			0.87)
$-2 \log L$	2377.06	2355.45	2337.31
Cox & Snell R ²	0.05	0.05	0.05
Nagelkerke R ²	0.10	0.11	0.12

Note. N = 4325.

** p < .01.

* *p* < .05.

behavior by incorporating the Big Five (i.e., openness to experience, extraversion, emotional stability, agreeableness, and conscientiousness) and need for cognition to reflect the personality traits. Using a large, diverse, population-representative sample from South Korea, we found that individual differences in personality traits exerted an effect to some extent. The effect sizes tended to be around the 10 to 30 % range. Openness to experience and need for cognition increased the probability of using OTT services. Openness to experience, emotional stability,

conscientiousness, and need for cognition had a negative association with binge-watching. When we split the sample by OTT frequency, the same effects were attained for daily OTT users. Personality traits outside of need for cognition had a null effect on binge-watching for non-daily OTT users. This research offers theoretical and practical contributions and are discussed next.

5.2. Theoretical contributions

Overall, this study theoretically contributes to the broad area of research that maps the relationship between technology use and individual differences. While previous research has linked binge-watching with psychological consequences such as loneliness and depression (Starosta & Izydorczyk, 2020; Sun & Chang, 2021), limited research has been devoted to examining the extent to which personality traits affect OTT use and binge-watching. Moreover, with users shifting towards OTT platforms to consume media content, there is a clear need to understand the psychological background behind OTT use and bingewatching. Overall, we demonstrate that personality traits exert an influence on OTT use and binge-watching to some extent.

In terms of the relationship between personality traits and OTT use, we found that higher levels of openness to experience were linked with OTT use. The underlying reason can be traced to the fact that openness to experience is characterized by embracing new ideas, experiences, and ventures, and adopting OTT services demands a similar attitude, as it entails exploring novel OTT platforms and newly released content offered by OTT services (Guadagno et al., 2008; Ross et al., 2009). Ultimately, these individuals are drawn to OTT services because these platforms offer cutting-edge digital technologies and services that they can experiment with (Mulla, 2022). We also found that, contrary to expectations, need for cognition had a positive impact on OTT use. Although speculative, a plausible explanation is that these individuals gravitate towards OTT services due to the presence of intricate and cognitively challenging materials, such as documentaries, films, and original series featuring convoluted plots that appeal to them. Future research could delve into these possibilities and illuminate the underlying mechanisms of this relationship.

As predicted, emotional stability and agreeableness did not have a significant effect on OTT use. However, against our expectations, extraversion and conscientiousness did not demonstrate a negative impact on OTT use; rather, these relationships were insignificant. We proffer that buffering effects played a sizable role in these cases. Extraverts do not relish being alone to watch OTT content (Charlton & Danforth, 2010). At the same time, they might need to watch it as a means to socialize with others (Peris et al., 2002). These conflicting motivations may offset the positive or negative relationship that exists between extraversion and OTT use. A similar neutralizing effect can happen with respect to the link between conscientiousness and OTT use. While OTT use can hinder the ability to achieve thoroughness and reliability for important and meaningful goals, this concern might not arise among conscientious individuals given that they are self-regulated and organized (Digman, 1997). Another offsetting effect could be that OTT use can be a release from the mental fatigue caused by the exertion involved in pursuing goal-oriented behavior (Leikas & Ilmarinen, 2017).

Whereas personality traits had a positive relationship with OTT use, they had a negative relationship with binge-watching. Specifically, among the Big Five, openness to experience, emotional stability, and conscientiousness, were negatively related to binge-watching. These results are in correspondence with what is expected. Individuals with high openness to experience would find binge-watching to be an interference with their priorities considering that it reduces the opportunity to put effort into creative, curious, and intellectual tasks (Correa et al., 2010). Individuals who are emotionally stable are less prone to bingewatch because they do not necessarily need binge-watching as an escape route (Digman, 1997). Stating it differently, binge-watching might be the ideal way to cope with feelings (i.e., anxiety, anger,

Table 5

Logistic regression model for binge-watching based on OTT frequency.

Predictors	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
	Exp <i>β</i> (95 % CI)	Exp β (95 % CI)				
Intercept	0.13** (0.08, 0.20)	0.13** (0.08, 0.19)	0.13** (0.08, 0.19)	0.02** (0.01, 0.05)	0.02** (0.01, 0.05)	0.02** (0.01, 0.05)
Gender (male)	0.88 (0.67, 1.15)	0.91 (0.70, 1.20)	0.94 (0.71, 1.22)	0.69 (0.44, 1.09)	0.72 (0.46, 1.13)	0.73 (0.47, 1.14)
Age	0.97** (0.95, 0.98)	0.97** (0.96, 0.99)	0.97** (96, 0.99)	0.95** (0.93, 0.98)	0.95** (0.92, 0.98)	0.95** (0.92, 0.98)
Education	0.99 (0.79, 1.26)	1.02 (0.81, 1.30)	1.05 (0.82, 1.33)	1.03 (0.69, 1.53)	1.05 (0.70, 1.56)	1.08 (0.72, 1.62)
Income	0.99 (0.92, 1.05)	0.99 (0.92, 1.06)	0.99 (0.92, 1.06)	1.05 (0.93, 1.18)	1.05 (0.93, 1.18)	1.06 (0.94, 1.19)
Marriage	1.11 (0.74, 1.67)	1.07 (0.71, 1.61)	1.06 (0.70, 1.60)	1.40 (0.73, 2.67)	1.39 (0.73, 2.67)	1.36 (0.71, 2.60)
IT diversity	0.97 (0.81, 1.15)	0.98 (0.82, 1.16)	0.99 (0.84, 1.18)	1.19 (0.90, 1.58)	1.18 (0.89, 1.56)	1.22 (0.92, 1.62)
Openness to experience		0.79** (0.68, 0.92)	0.82* (0.70, 0.96)		0.88 (0.67, 1.15)	0.89 (0.68, 1.16)
Extraversion		1.06 (0.92, 1.23)	1.06 (0.92, 1.22)		0.85 (0.67, 1.07)	0.85 (0.67, 1.08)
Emotional stability		0.84** (0.73, 0.96)	0.84* (0.73, 0.96)		0.95 (0.75, 1.19)	0.95 (0.76, 1.19)
Agreeableness		1.00 (0.86, 1.16)	1.01 (0.87, 1.17)		0.95 (0.74, 1.21)	0.94 (0.74, 1.20)
Conscientiousness		0.86* (0.74, 0.99)	0.85* (0.74, 0.98)		0.94 (0.73, 1.20)	0.93 (0.73, 1.20)
Need for cognition			0.77** (0.67, 0.89)			0.80* (0.64, 0.99)
-2 log L	1585.02	1565.84	1551.99	760.79	754.64	750.59
Cox & Snell R ²	0.02	0.03	0.04	0.02	0.02	0.02
Nagelkerke R ²	0.04	0.06	0.07	0.06	0.07	0.07

Note. N = 1980 for Models 7–9; N = 2345 for Models 10–12. Models 7–9 account for users who use OTT on a daily basis whereas Models 10–12 account for users who use OTT on a non-daily basis.

p < .01.

p < .05.

frustration) when individuals are emotionally unstable. Those who are conscientious tend to exhibit better self-control and not be susceptible to impulsivity and distraction (Kim et al., 2015), making it unlikely that they would binge-watch. We also found that individuals with a higher need for cognition were less likely to indulge in binge-watching. This is unsurprising since binge-watching can have an adversarial effect on (intense) cognitive processes (Castro et al., 2021). Extraversion and agreeableness, personality traits that are characterized by social engagement, had no relationship with binge-watching.

It is important to highlight that openness to experience and need for cognition have a significant influence on both OTT use and bingewatching, albeit in divergent ways. The results indicate that higher scores in these traits are associated with heightened OTT use and reduced binge-watching. Perhaps this is because using OTT services provides mental stimulations that are original, unique, and thoughtprovoking (Gortmaker et al., 1990). At the same time, while bingewatching can be a tempting activity for some, it requires passive and extended screen time, which may not appeal to those who value openness to experience and a need for cognition (Castro et al., 2021; Ort et al., 2021).

It must be noted that binge-watching can be subtle and idiosyncratic; therefore, we explored whether mapping personality onto bingewatching is different for daily versus non-daily users. The purpose here was to show that personality traits affect binge-watching in a distinctive way for those who are addicted and need to access OTT services on a daily basis (Riddle et al., 2018). We found that openness to experience, emotional stability, conscientiousness, and need for cognition were negatively related to binge-watching for daily users. On the other hand, only need for cognition was negatively related to bingewatching for non-daily users. Overall, this suggests that personality traits exert their effect on binge-watching exclusively for addictive OTT users (Starosta et al., 2020). This implies that the psychology of bingewatching - a topic that needs further scrutiny - is a multifaceted and intricate subject requiring a profound understanding of personality traits and addiction.

5.3. Practical contributions

The theoretical contributions have practical implications for businesses offering OTT services along with promoting (or preventing) binge-watching tendencies. Understanding how personality traits influence usage can help businesses tailor their offerings to meet the needs of different users more effectively. For instance, we found that businesses must be careful and pay extra attention to those who are open to experience and have a need for cognition given that they would likely use OTT services but do not binge-watch. As binge-watching can elevate consumer loyalty towards OTT services (Sung et al., 2018), businesses need to find the right balance for these personality types. Another implication is that OTT services should take into account the target audience's personality traits when creating and promoting their content. This will allow them to reach the target audience more effectively and make sure their content appeals to the audience's personality. As an example, users with lower levels of emotional stability and low conscientiousness tend to prefer cult classics, animation, and cartoon movies (Cantador et al., 2013). On the other hand, those with a higher need for cognition prefer content that includes political and social issues (Hall & Zwarun, 2012).

Besides the business implications, this research also bears legal and health policymaking implications. Here, the results based on the relationship between personality traits and binge-watching from an OTT frequency use angle have to be put in notice. Understanding this relationship can help develop effective interventions and strategies to address excessive binge-watching and promote healthy OTT use. Therefore, policies and regulations may be necessary to ensure that users are protected from the negative effects of binge-watching. According to this research, this can apply to those who are daily users. For example, regulations could require OTT services to include warnings or time limits for users who exhibit personality traits that put them at risk for excessive use. This research suggests that individuals within these populations could have lower levels of openness to experience, emotional stability, conscientiousness, and need for cognition. Moreover, policies can mandate that OTT services provide resources for certain personality-type users who need help managing their use, such as information on how to take breaks or how to seek professional help if necessary.

5.4. Limitations and future research

This research possesses limitations. First, the representative sample from South Korea can be an issue. Hence, it is ambiguous as to whether the current results mirror the characteristics of other populations. The sample was sufficiently large and diverse with respect to gender, age, education, income, and marriage, but it contains no ethnic/racial diversity. Conclusions can possibly be downsized in scope to countries

with more diversity. Moreover, in terms of representing OTT use and binge-watching, South Korea is a global leader in adopting such technology; thus, this research might reflect future behavioral prospects for other countries. For that matter, this research needs to be replicated in other countries or cultures to increase generalizability.

Second, using short scales for the Big Five personality traits and need for cognition can reduce the predictive validity compared to lengthier scales (e.g., 34-item version for need for cognition (Cacioppo & Petty, 1982)). Prior work has shown using short scales can produce estimated effect sizes that are the lower bounds of the population effect sizes (Credé et al., 2012; Gosling et al., 2003). Credé et al. (2012) also contend that reflecting a construct with two items, such as in this research, can lead to an extreme reduction in predictive validity. Much future research is necessary to test the relationships with extensive scales of personality traits.

Third, this research only investigated the direct effects of personality traits on OTT use and binge-watching. Although we used OTT frequency as a moderator, there can be other potential factors that can mediate or moderate the relationships. Example mediators or moderators specific to this research context include self-regulation (Hagger, 2010), flow (Shim & Sung, 2022), content type (e.g., original series, documentaries, and movies), device type (e.g., PC, tablet, smartphone) and viewing style (e.g., skipping intros, fast forward, and rewind). Such tests are necessary to augment the theory on individual differences and technology use.

Despite the limitations that this research carries, it has one major strength over other studies. This research uses a large, diverse, population-representative sample that potentially generates valid results. Close to all research examining psychological characteristics, OTT use, and binge-watching have relied on college students – a sample that is affluent and cognitively less developed – to produce research outcomes (e.g., Panda & Pandey, 2017; Sung et al., 2018). Such research tends to be less valid in terms of the significance, magnitude, and direction of the relationships (Peterson, 2001). At a (South Korean) population level, personality traits including openness to experience and need for cognition appear to play a substantial role in explaining OTT use and binge-watching. Nonetheless, it is essential to be mindful of the boundary conditions when we interpret outcomes from single cohorts from comparatively selected economic backgrounds (Kim et al., 2015).

Our study's approach to categorizing binge-watching by viewing duration offers a straightforward metric for comparison; nonetheless, it is essential to recognize the potential benefits of utilizing validated binge-watching scales, such as the binge-watching scale introduced in Flayelle et al. (2019). These scales bring a multifaceted perspective to the understanding of binge-watching behaviors, encompassing psychological, emotional, and habitual dimensions beyond mere time spent in front of the screen. Our findings suggest a foundation upon which future research can build. We advocate for the development of a nuanced measurement tool that integrates our duration-based approach with the rich behavioral indicators offered by existing scales. Such a comprehensive tool would allow for a deeper analysis of binge-watching habits and their related consequences.

CRediT authorship contribution statement

Jaehyun Lee: Writing – review & editing, Writing – original draft, Methodology, Conceptualization. Azel Shokparova: Validation, Methodology, Investigation. Zagira Asrymbetova: Validation, Methodology, Formal analysis. Orane Farrah Lahcine: Methodology, Formal analysis, Data curation. Yeolib Kim: Writing – review & editing, Supervision, Conceptualization.

Declaration of competing interest

None.

Data availability

I have shared the link to the data in the manuscript.

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J. Lee et al.

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