

Lim, Chulmin

Conference Paper

Examining factors affecting local IPTV users' intention to subscribe to global OTT service through their local IPTV service

23rd Biennial Conference of the International Telecommunications Society (ITS): "Digital societies and industrial transformations: Policies, markets, and technologies in a post-Covid world", Online Conference / Gothenburg, Sweden, 21st-23rd June, 2021

Provided in Cooperation with:

International Telecommunications Society (ITS)

Suggested Citation: Lim, Chulmin (2021) : Examining factors affecting local IPTV users' intention to subscribe to global OTT service through their local IPTV service, 23rd Biennial Conference of the International Telecommunications Society (ITS): "Digital societies and industrial transformations: Policies, markets, and technologies in a post-Covid world", Online Conference / Gothenburg, Sweden, 21st-23rd June, 2021, International Telecommunications Society (ITS), Calgary

This Version is available at:

<https://hdl.handle.net/10419/238036>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Examining factors affecting local IPTV users' intention to subscribe to global OTT service through their local IPTV service ^a

Chulmin Lim, Korea University

Abstract

In November 2018, LG Uplus had a partnership with Netflix for the first time in South Korea and started to offer the integrated service which is available to subscribe and use Netflix through its IPTV. Despite of huge influence of integrated service to local media industry, there are few studies to examine the strategic meaning of this contentious phenomenon and consumers' responses. Therefore, this study tried to find meaningful factors affecting local IPTV users' intention to subscribe to global OTT service through this integrated service by using structured equation model (SEM). From the result of this study, users' dissatisfaction with IPTV could not impact on intention to subscribe to global OTT service. However, users' perceived value of global OTT service, perceived benefit of integrated service and binge watching have positive impact on it. This study has some academic and practical implications for practitioners in pay-TV and OTT industry.

Keywords: Internet Protocol TV (IPTV), Over-the-Top (OTT), U+tv, Disney Plus and South Korea

^a Acknowledgment

- 1) This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2019S1A3A2099973).
- 2) This research was supported by the MSIT(Ministry of Science and ICT), Korea, under the ITRC(Information Technology Research Center) support program(IITP-2021-0-01749) supervised by the IITP(Institute for Information & Communications Technology Planning & Evaluation).

1. Introduction

As diverse operators begin to provide over-the-top (OTT) service and content consumption through OTT has been dramatically increased after COVID-19, competition in the pay-TV industry has been more intensified. To sustain their OTT business and obtain new subscribers in the competitive home market, global OTT services such as Netflix and Amazon Prime Video try to expand their business territory to other countries. While they expand their market size, the global OTT services influence not only on local OTT market but also the pay-TV market in other countries in several ways (Kim et al., 2016). In the IPTV (Internet Protocol TV) market in South Korea, for instance, which is led by major South Korean telecom operators, IPTV service providers have cooperated with global OTT service to strengthen their service competitiveness. For instance, in November 2018, LG Uplus had a partnership with Netflix for the first time in South Korea and started to offer the integrated service which is available to subscribe and use Netflix through its IPTV (E-J. Kim, 2021). After that, olleh tv, which is KT's IPTV service, also began to offer the same service in September 2020 (E-J. Kim, 2021).

This integrated service has some strategic values for both global OTT service and local IPTV service. After Netflix is provided through the local IPTV service in 2018, the number of Netflix subscribers has consistently increased from 900 thousand in 2018, 2.73 million in 2019, and 3.62 million in 2020 (H. Kim, 2021). It shows that cooperation with local IPTV service having many users in the local pay-TV market is helpful for entering the new market for global OTT services (Daidj & Egert, 2018). Furthermore, IPTV users also can subscribe or use OTT service through IPTV without smart TV or an additional media player such as Chromecast. Moreover, users can watch exclusive or original content from the OTT service that is not provided in their current IPTV service. It means that additional subscribe and use OTT service through IPTV could supplement IPTV's insufficient part. Thus, integrated service can be

critical strategy for IPTV service to hold current users or acquire new users. In practice, U+tv, LG Uplus's IPTV service, started to provide integrated service with Netflix exclusively at the end of 2018 and the number of its subscribers in 2020 has increased about 20% (473 thousand) compared to 2018 (402 thousand) (LG Uplus, 2021).

On the other hand, it has also been pointed out that this integrated service could negatively impact on local media industry as well. The Korean Broadcasters Association (KBA) pointed out that major local IPTV service providers' partnership with global OTT service would boost the global OTT service to encroach on the local media market, and also appealed for the establishment of policies or regulations to protect the entire South Korean media industry from global OTT services (Baek, 2020). One of the reasons for this claim would be that growing influence of global OTT service in local market could be considered as huge threat for terrestrial broadcasters providing wave, the OTT service allied with SKT. This industrial circumstance implies that the global OTT service is recognized as a competitor as well as a cooperator in South Korean media industry.

Despite of huge influence of integrated service to local media industry, there are few studies to examine the strategic meaning of this contentious phenomenon and consumers' responses. In addition, Disney+, Disney's OTT service, will be launched in South Korea and cooperate with major IPTV service providers as Netflix. With another new global OTT service which is available to subscribe and use through IPTV, current IPTV users can make decision to subscribe and use it or not. At this point, it is important for both IPTV service and OTT service providers to estimate the users' perception on integrated service and new global OTT service. Thus, it could give some policy or regulatory implications for practitioners in pay-TV and OTT industry. Therefore, the aim of this study is to find meaningful factors affecting local IPTV users' intention to subscribe to global OTT service through this integrated service.

2. Literature review and hypothesis

2.1 Competition and cooperation between IPTV and OTT services in South Korea

IPTV market in South Korea has grown remarkably even in a short period of time. From the report from Ministry of Science and ICT (2020), the number of IPTV subscribers in Korea has risen sharply from 13.94 million in 2016 to 17 million in the first half of 2020. This report also mentioned that since the number of IPTV subscribers exceeded the size of cable-TV in 2018, this gap has widened consistently. Consequently, the market share of IPTV service subscribers over 51% (33.94 million) of the total pay-TV market in 2020. In terms of service providers, KT (olleh tv) has 7.58 million subscribers (22%), SK Broadband (Btv) 5.3 million (15%) and LG Uplus (U+tv) 4.59 million (13%) at the first half of 2020 (Ministry of Science and ICT, 2020). Jo et al. (2020) mentioned three key factors that led to the rapid development and diffusion of South Korean IPTV industry compared to other countries: High-quality of network infrastructure and its wide diffusion, fierce competition in IPTV market among major telecom operators and relatively late digitalization of cable TV which is the competitor in pay-TV market.

Not only the IPTV, also the OTT service and its market has meaning in South Korean media industry. As the scale of global OTT industry has grown from 7.6 billion \$ in 2018 to 110 billion \$ (BCG, 2020), sales in the South Korean OTT market grew from 170 million \$ in 2014 to 700 million \$ in 2020, with an average annual growth of about 26% (KCC, 2020). Based on monthly active users for subscription-based OTT service, Netflix had the largest number of monthly active user (MAU) with about 10 million, followed by wavve (3.95 million) and TVING (2.65 million) in March 2020 (Igaworks, 2020). IITP (2020) examined why OTT services could become widespread in South Korea and found four main reason for it: Service

based in diverse devices, reasonable price and high quality of contents, less limitation in regulation and high demand for social distancing life after COVID-19.

In terms of the same type of product, content, IPTV services and OTT services have been competed with each other and a lot of studies on their competitive aspects were mainly conducted through niche analysis. Through this methodology, Kim et al. (2016) argued that degree of competition between pay-TV and OTT service in South Korea is relatively low. In that period, Netflix was not launched in South Korea and also local OTT services were just considered as an extension of terrestrial broadcasters, so competitiveness of OTT services was not that significant (Park, 2017). On the other hand, Li (2017) examined the competition among media service providers including OTT, IPTV and digital cable in Taiwan. The author verified that OTT service has more relative competitiveness than other two services. These findings show that previous studies mainly focus on substitutive relationship between pay-TV and OTT service offering similar contents.

To understand the value of cooperation between global OTT services and local pay-TV service, Daidj and Egert (2018) conducted the case study of Netflix and French local telecom operators and TV channels. These studies, however, showed limitation in identifying the relationship or synergy between local pay-TV and global OTT platform and the users' response to their integrated service. Recently, however, the growth rate of global OTT subscribers in OTT markets has been on the decline and this phenomenon is emerging not only in South Korea but also globally. It could be the result of the users' dissatisfaction on current OTT service or demand for new contents. To secure their current subscribers, at this point, global OTT service providers try to shift the paradigm of competition with local media service providers that still have a significant influence in the local market by considering strategic cooperation with them. In the Korean media industry, global OTT and IPTV service providers are actively cooperating against the growing influence of Netflix in local market (IITP, 2020).

For example, LG Uplus entered into a strategic partnership with Netflix in November 2018 in the form of platform in platform (PIP) and KT followed this strategy in 2019. This service

In this sense, finding crucial reasons for users to subscribe to global OTT service through IPTV might be helpful for both IPTV and OTT service providers to expand their market in the competitive environments. As several studies have highlighted the importance of synergies between these platforms, this approach would be meaningful in that it shows the possibility of the two operators working together to achieve their respective business goals in the South Korean market, where the market size is relatively limited. Accordingly, this study presents the research question as follows:

RQ: What factors would impact local IPTV users' intention to subscribe and use global OTT service through their IPTV service?

2.2 Research hypotheses

2.2.1 Dissatisfaction with IPTV service and determinants of it

Customers may feel dissatisfied if the service or product they are using does not meet their expectations (Mittal et al., 1999). Some studies argued that if users feel dissatisfied with the service, they can break off their relationship with the existing service or switch to an alternative (Bansal et al., 2005; Cho & Song, 2012; Panther & Farquhar, 2004). This situation could be appeared in media contents in substitutive relationship. For example, examined the relationship between cable-TV and web streaming service regarding cord-cutting and found that frustration with technical deficiency and intent to cut the cord on cable was mediated by perceived advantages (Tefertiller, 2018). In particular, this study expects that if integrated service is offered to local IPTV service users, they are more likely to subscribe new global

OTT service which is having diverse and unique contents repertoire. Furthermore, if IPTV users dissatisfied with certain part of current IPTV service, they would more consider about additional OTT platform to compensate the dissatisfaction of IPTV service. In this situation, the complementary relationship between IPTV service and OTT service can be further strengthened. Even though IPTV users are dissatisfied with current IPTV service and they consider switching to other IPTV services or terminating existing services (Ahn et al., 2006; Kim et al., 2017), they can additionally subscribe to the global OTT service through integrated service while retaining current IPTV service. Therefore, this study presents the following hypothesis:

H1: Dissatisfaction with IPTV service positively impacts on the intention to subscribe to additional global OTT service.

It has been shown that the most important service affecting overall dissatisfaction is dissatisfaction with core services (Cho & Song, 2012). In this sense, Lee (2008) noted that users perceive improvements to the content sector as the most important thing in IPTV service management. In this regard, Lee et al. (2011) conducted a study to identify factors affecting IPTV adoption and demonstrated that content diversity plays an important role. From these prior studies, this study confirmed that securing and providing a variety of content may be one of the main goals as a media platform. Accordingly, if users perceive that IPTV services do not provide diverse contents, users are expected to be dissatisfied with the overall IPTV service. Furthermore, diversity of content can be subdivided based on the content types: local, global and original. Accordingly, this study proposes following hypotheses:

H2: Local content diversity of IPTV service negatively impact on the users' dissatisfaction with IPTV service.

H3: Global content diversity of IPTV service negatively impact on the users' dissatisfaction with IPTV service.

H4: Original content diversity of IPTV service negatively impact on the users' dissatisfaction with IPTV service.

Convenience refers to an individual's expectation to minimize their time and effort (Gehrt et al., 1996). In the context of IPTV service, convenience has been considered as an important factor affecting users' intention to adopt IPTV (Lin et al., 2012). In the process of using IPTV, users can search for the content they want and receive information related to the content. If these content usage environments are not designed easily and conveniently, users may feel dissatisfied with IPTV services. In addition, IPTV services have recommended based on users' preference, and these recommendations are not only related to consumers' satisfaction with content, but also to convenience in that they can reduce the hassle of finding content directly. Accordingly, this study proposes following hypotheses:

H5: Convenience of IPTV service negatively impact on the users' dissatisfaction with IPTV service.

Monetary value refers to the result of users' evaluation based on price of service or product. Service or product providers should consider the proper price regarding the quality of service and products. If IPTV users do not perceive the price would not be reasonable considering the contents or overall service, users would feel dissatisfied with current service. In this sense, monetary value of IPTV has been considered as an important factor affecting users' satisfaction or adoption of it (Lee et al., 2011). Since IPTV service has two different type

of paying system: (monthly) basic fee and VOD fee. Basic fee is mandatory fee that users must pay for basic service but users can purchase each content or subscribe to package program services additionally. These two types of IPTV fee could be recognized for users differently. To understand users' experience of IPTV comprehensively, this study divided monetary value into two factors: monetary value for basic fee and VOD fee. Accordingly, this study proposes following hypotheses:

H6: Monetary value of IPTV (Basic fee) negatively impact on the users' dissatisfaction with IPTV service.

H7: Monetary value of IPTV (VOD fee) negatively impact on the users' dissatisfaction with IPTV service.

2.2.2 Perceived value of global OTT service and determinants of it

Perceived value refers to consumers' overall evaluation of service or product by considering benefit and sacrifice (Zeithaml, 1988). Basically, customers are likely to have certain amount of value by sacrificing their economic or non-economic efforts. In this sense, a lot of studies regarding adoption, purchasing service or product have considered perceived value as an important component (Chen & Dubinsky, 2003; Kerin et al., 1992). In the context of OTT media services, it has been examined as an important determinant of continuance intention of IPTV (Lin et al., 2012) and loyalty of OTT service (Chen & He, 2019). It shows that perceived value is meaningful components related to users' behavior intention in the media service field as well (Kim et al., 2007). Therefore, if IPTV users perceive the value of global OTT service would satisfy their expectation, they would want to subscribe and use OTT service through integration service. Accordingly, this study proposes following hypothesis:

H8: Perceived value of global OTT service positively impacts on the intention to subscribe to it.

Several studies have confirmed that contents aspect should be recognized as core services not only by IPTV but also by OTT services. From the exploratory research to find factors affecting users' intention to subscribe OTT service, it is seen that users expect OTT service to provide diverse local, global and unique contents to them (Nagaraj et al., 2021). Yoo and Park (2018) conducted a study on Netflix users in South Korea and found that the satisfaction of content is the most significant factor that affects the usefulness of the service. In addition, they found that diversity of original content had the biggest impact on satisfaction of content, followed by diversity of global content. Based on the importance of content diversity, global OTT platform is trying to offer wide range of choices in contents for users. Thus, when users perceive OTT platform has enough capability to provide diverse local, global and original contents, they would expect OTT service could give some reasonable values to them. Accordingly, this study proposes following hypotheses:

H9: Local content diversity of global OTT service positively impact on the perceived value of it.

H10: Global content diversity of global OTT service positively impact on the perceived value of it.

H11: Original content diversity of global OTT service positively impact on the perceived value of it.

Convenience, in the context of OTT service, is related to how much user interface, content information, searching and recommendation function are convenient and efficient for users (Cho, 2013; Yoo & Park, 2018). It has been considered as an important component of OTT service that influence users' perception on service and satisfaction (Nagaraj et al., 2021). Since OTT service is available from several devices including smartphone, laptop and TV through the integrated service, users could expect global OTT service to be provide with high convenience with every device. Since one of motivation to use OTT service is watching contents anytime and anywhere conveniently (Nagaraj et al., 2021), convenience is expected to play an important role in forming the core value of global OTT as well. Therefore, this study proposes following hypothesis:

H12: Convenience of global OTT service positively impact on the perceived value of it.

Monetary value, in the context of OTT service, refers to customers' perception on economic benefit by using OTT service (Chen & He, 2019). Chen and He (2019) divided perceived value into economic value and emotional value and they verified that economic value has a strong influence on OTT users' satisfaction than emotional value. The participant of this study are people who already subscribe to and use IPTV service. Therefore, they are people who already have financial expenditure on content service. For such people, using integrated services to subscribe additional OTT service could be considered as an economic burden. Thus, users would expect the contents and services to provide with high monetary value (Jin & Lee, 2009; Lin et al., 2012). Therefore, this study proposes following hypothesis:

H13: Monetary value of global OTT service positively impact on the perceived value of it.

2.2.3 Perceived benefit of integration service

Perceived benefit refers to advantages from by integrated service in this study. Bouwman et al. (2008) identified that IPTV service can provide diverse additional services such as interactive service and video on demand (VoD). In addition, they mentioned that IPTV service can provide exclusive and unique programs to users through differentiated additional service. In this sense, integrated service form local IPTV service with global OTT could be meaningful for IPTV services. By using this service, IPTV users can subscribe and use OTT platform through their current IPTV service (E-J. Kim, 2021). If users have subscription on OTT platform, they do not need to pay extra fee for this service. It implies that IPTV users can watch both contents from IPTV and global OTT platform without purchasing extra device and take advantage of N-screen function with their TV and mobile devices. If IPTV users perceive these benefits from integrated service high, they are more likely to subscribe and use global OTT service through IPTV service. Therefore, this study suggests following hypothesis:

H14: Perceived benefit of integration service positively impacts on the intention to subscribe to global OTT service.

2.2.4 Characteristic of users (Binge watching)

Some studies have examined that relationship between users' characteristic and user behavior. Cha (2013) verified that users' viewing orientations such as ritualistic orientation and instrumental orientation affect intention to use online video platforms. In the context OTT service, Netflix has the advantage for users to be able to watch content without additional payment, and it provides multiple content series at once (Yoo & Park, 2018). These characteristics of service have affected to users' content viewing pattern which is called binge

watching (Jenner, 2016). For users who are used to and prefer to binge watching, they would expect for another OTT service to satisfy their needs. Disney Plus maintains a policy of providing new content at intervals, unlike Netflix, rather than being released all at once. However, if much of the previous series of content that Disney Plus already has is provided, users will still be able to binge watch diverse contents. Therefore, this study suggests following hypothesis:

H15: binge watching characteristic of users positively impacts on the intention to subscribe to global OTT service.

2.2.5 Intention to exit OTT service

Users consistently want to watch new service and it results in frequent platform exit (Ping, 1994). To manage users' exit which can be critical for financial management, several studies have been tried to find the factors affecting users' exit and dissatisfaction, habit and attractiveness have been verified as an important reason for it (Gummesson, 2007; Singh, 1990). If a new competitive OTT service is provided with integrated services, users can find new content and subscribe to new services instead of previous service. The intention to use the new service may make users feel unnecessary for current OTT service. Furthermore, it is expected to have influence on users' intention to exit current service as well. Therefore, this study suggests following hypothesis:

H16: Intention to subscribe to global OTT service positively impacts on the intention to exit current OTT service.

Based on the previous literature reviews, this study suggests following research models to find factors influencing users' intention to subscribe global OTT service. As shown in Figure 1, this model consists of dissatisfaction on current IPTV, perceived value of global OTT service, perceived benefit of integration service, binge watching and related factors.

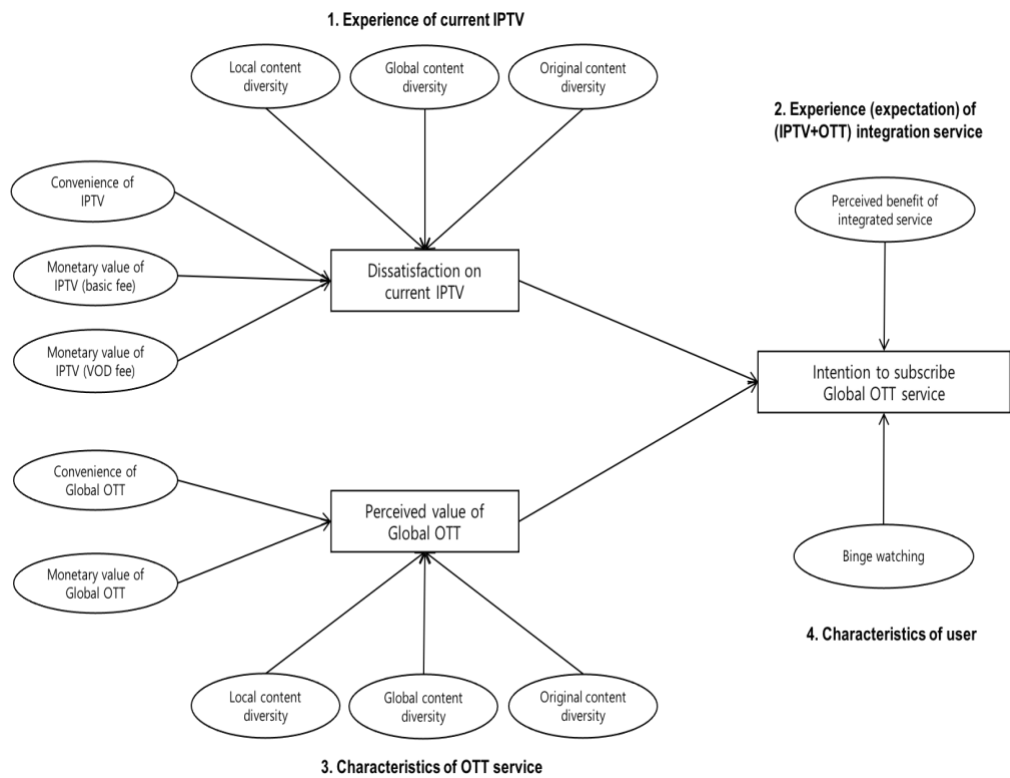


Fig 1. Research model.

3. Methodology

3.1 Data collection and analysis

To test the proposed hypotheses, this research employed a survey on the current users of U+tv, which is the IPTV service provided by LG Uplus. The questionnaires are mainly based on previous literature in the field of service industry regarding research on IPTV and OTT adoption. All measurement uses the seven-point Likert-scale, ranging from "1 – strongly

disagree", to "7 – strongly agree". The online survey was conducted by Macromill Embrain, which is one of the biggest online research company from May 31 to June 6, 2021, and 317 responses were included in the analysis. This study adopted PLS-SEM (Partial least squares structural equation modeling) as it is possible to test multi-staged causal relationships at the same time (Gefen, Straub, & Boudreau, 2000).

3.2 Sample and descriptive statistics

Table 1 shows the personal traits of survey participants such as gender, age, frequency of daily usage, OTT subscription, and household. Since the online survey adopted convenience sampling, gender of survey participant was divided almost into half of each, and the age group of participants was divided evenly across the entire population excepts participants over 60s. To examine the difference between Netflix users and non-Netflix users, this study also got sample inconvenience for both groups evenly.

Regarding the amount of time to use IPTV on a weekday, the average hour per day was 2.97 and 5.37 for weekends. Also, most of the participants (65%) use IPTV every day, and there were only 6% of participants using IPTV less than three days per week. Since IPTV service is based on household subscription, this study asked about the number of family members of participants. As a result, participants who are living alone took 13%, and those living with two family members (including participants) took 20%. The portion of participants who are living with more than three family members was about 67%.

Table 1. Sample characteristics

Demographic variable / Item	Frequency	Percentage (%)
Gender		
Male	144	45
Female	173	55
Age		
The 20s	67	21
The 30s	69	22
The 40s	88	28
The 50s	68	21
The 60s	25	8
Netflix subscription		
Netflix user	159	50
Non-Netflix user	158	50
Average of daily IPTV usage (Weekday) / hour	2.97	100
Average of daily IPTV usage (Weekend) / hour	5.37	100
Average of weekly IPTV usage / Day		
1	5	2
2	13	4
3	19	6
4	21	7
5	38	12
6	15	5
7	206	65
The number of family members		
Single-person households	40	13
2	64	20
3	95	30
4	103	32
5	11	3
6	3	0.9
7	1	0.1
Total	317	100%

3.3 Test of the measurement model

This study checks Cronbach's alpha, composite reliability (CR), and factor loading to test reliability. As shown in Table 2, all the values for both of the Cronbach's alpha and CR are above 0.7, a reasonable threshold provided by Werts, Linn, and Jöreskog (1974), and furthermore, factor loading of all items exceeds 0.7, implying that all items used in this study have acceptable reliability (Barclay et al., 1995).

In addition, the average variance extracted (AVE) for every factor was above the acceptable level of 0.5 (Gefen et al., 2000), and thus the proposed research model has sufficient convergent validity. To test the discriminant validity, which proves that indicators are assigned appropriately to each factor rather than on other factors, the Fornell–Larcker criterion was used and check whether the AVE of each factor is above its squared correlations with others (Henseler et al., 2016). The diagonal values in Table 3, which represent the square root of the AVE, exceed other values in the same column. Therefore, this research model confirmed several standards for reliability and validity.

Table 2. Reliability and convergent validity

Item	Cronbach's Alpha	CR	AVE
Local content diversity of IPTV	0.92	0.94	0.80
Global content diversity of IPTV	0.90	0.92	0.75
Original content diversity of IPTV	0.95	0.98	0.95
Convenience of IPTV	0.90	0.92	0.71
Monetary value of IPTV (basic fee)	0.94	0.96	0.89
The monetary value of IPTV (VOD fee)	0.95	0.97	0.91
Dissatisfaction with IPTV	0.95	0.97	0.91
Local content diversity of Global OTT	0.95	0.97	0.88
Global content diversity of Global OTT	0.88	0.92	0.74
Original content diversity of Global OTT	0.83	0.89	0.67
The convenience of global OTT	0.93	0.95	0.79
The monetary value of global OTT	0.92	0.95	0.86
The perceived value of global OTT	0.94	0.96	0.85
Perceived benefit of integrated service	0.77	0.90	0.81
Binge-watching	0.93	0.95	0.79
Intention to subscribe to global OTT	0.96	0.97	0.90
Intention to exit current OTT	0.92	0.94	0.80

Table 3. Fornell-lacker criterion

	Binge- watching	Convenience of IPTV	The convenience of global OTT	Dissatisfaction with IPTV	Global_IPTV	Global_OTT	Intention to subscribe to global OTT	Local_IPTV	Local_OTT	The monetary value of VOD	The monetary value of the basic fee	The monetary value of global OTT	Original_IPTV	Original_OTT	Perceived benefit of integrated service	The perceived value of global OTT	Intention to exit current OTT
Binge-watching	0.821																
Convenience of IPTV	0.184	0.835															
The convenience of global OTT	0.324	0.501	0.862														
Dissatisfaction with IPTV	0.089	-0.383	-0.105	0.951													
Global_IPTV	0.173	0.636	0.42	-0.249	0.859												
Global_OTT	0.113	0.366	0.419	-0.075	0.336	0.834											
Intention to subscribe to global OTT	0.249	0.346	0.411	-0.02	0.405	0.374	0.945										
Local_IPTV	0.25	0.497	0.392	-0.162	0.767	0.237	0.211	0.889									
Local_OTT	-0.04	0.26	0.215	0.126	0.339	0.526	0.423	0.107	0.94								
Monetary value of VOD	0.124	0.475	0.262	-0.127	0.523	0.31	0.406	0.411	0.362	0.951							
Monetary value of basic fee	0.192	0.508	0.358	-0.258	0.572	0.374	0.534	0.477	0.379	0.749	0.943						
Monetary value of global OTT	0.1	0.18	0.376	0.004	0.2	0.241	0.526	0.108	0.398	0.356	0.423	0.923					
Original_IPTV	0.165	0.516	0.297	-0.049	0.603	0.213	0.357	0.402	0.46	0.585	0.508	0.229	0.975				
Original_OTT	0.189	0.35	0.433	-0.13	0.368	0.614	0.429	0.304	0.406	0.254	0.3	0.37	0.163	0.773			
Perceived benefit of integrated service	0.261	0.366	0.489	-0.254	0.333	0.273	0.378	0.353	0.102	0.167	0.253	0.28	0.153	0.399	0.901		
Perceived value of global OTT	0.171	0.301	0.442	-0.047	0.363	0.35	0.733	0.2	0.471	0.382	0.496	0.857	0.325	0.452	0.368	0.924	
Intention to exit current OTT	0.043	-0.076	0.085	0.424	-0.067	0.077	0.213	-0.028	0.186	0.007	-0.048	0.024	0.061	0.053	0.002	0.027	0.894

Table 4. Result of path analysis

Path		All users		Non-Netflix users		Netflix users	
		Coefficient (β)	Result	Coefficient (β)	Result	Coefficient (β)	Result
H1(+)	Dissatisfaction with IPTV -> Intention to subscribe to global OTT	0.025	Not supported	0.034	Not supported	0.03	Not supported
H2(-)	Local content diversity of IPTV -> Dissatisfaction with IPTV	-0.015	Not supported	-0.155	Not supported	0.138	Not supported
H3(-)	Global content diversity of IPTV -> Dissatisfaction with IPTV	-0.061	Not supported	0.043	Not supported	-0.184	Not supported
H4(-)	Original content diversity of IPTV -> Dissatisfaction with IPTV	0.286	Supported	0.288	Supported	0.263	Supported
H5(-)	Convenience of IPTV -> Dissatisfaction with IPTV	-0.395	Supported	-0.344	Supported	-0.411	Supported
H6(-)	Monetary value of IPTV (basic fee) -> Dissatisfaction with IPTV	-0.231	Supported	-0.223	Not supported	-0.248	Supported
H7(-)	Monetary value of IPTV (VOD fee) -> Dissatisfaction with IPTV	0.023	Not supported	-0.105	Not supported	0.139	Not supported
H8(+)	Perceived value of global OTT -> Intention to subscribe to global OTT	0.656	Supported	0.621	Supported	0.677	Supported
H9(+)	Local content diversity of Global OTT -> Perceived value of global OTT	0.14	Supported	0.186	Supported	0.11	Supported
H10(+)	Global content diversity of Global OTT -> Perceived value of global OTT	0.021	Not supported	0.027	Not supported	0.028	Not supported
H11(+)	Original content diversity of Global OTT -> Perceived value of global OTT	0.106	Supported	0.148	Not supported	0.073	Not supported
H12(+)	Convenience of global OTT -> Perceived value of global OTT	0.052	Not supported	-0.002	Not supported	0.095	Not supported
H13(+)	Monetary value of global OTT -> Perceived value of global OTT	0.682	Supported	0.603	Supported	0.743	Supported
H14(+)	Perceived benefit of integrated service -> Intention to subscribe to global OTT	0.095	Supported	0.094	Not supported	0.11	Not supported
H15(+)	Binge watching -> Intention to subscribe to global OTT	0.152	Supported	0.217	Supported	0.102	Not supported
H16(+)	Intention to subscribe to global OTT -> intent to exit current OTT	-	-	-	-	0.213	Supported

Note: *:p<.05, **:p<0.01, ***:p<.001

4. Results

The hypotheses testing using PLS analysis show that the research model of this study could explain 71.9% of the variance in the perceived value of global OTT, 57.6% of the variance in intention to subscribe to global OTT and 26.2% of the variance in dissatisfaction with current IPTV. From the bootstrapping test for the research model (all users), the results of path coefficients are shown in Table 4, and Figure 2 and 6 hypotheses are supported among 15 hypotheses from path analysis.

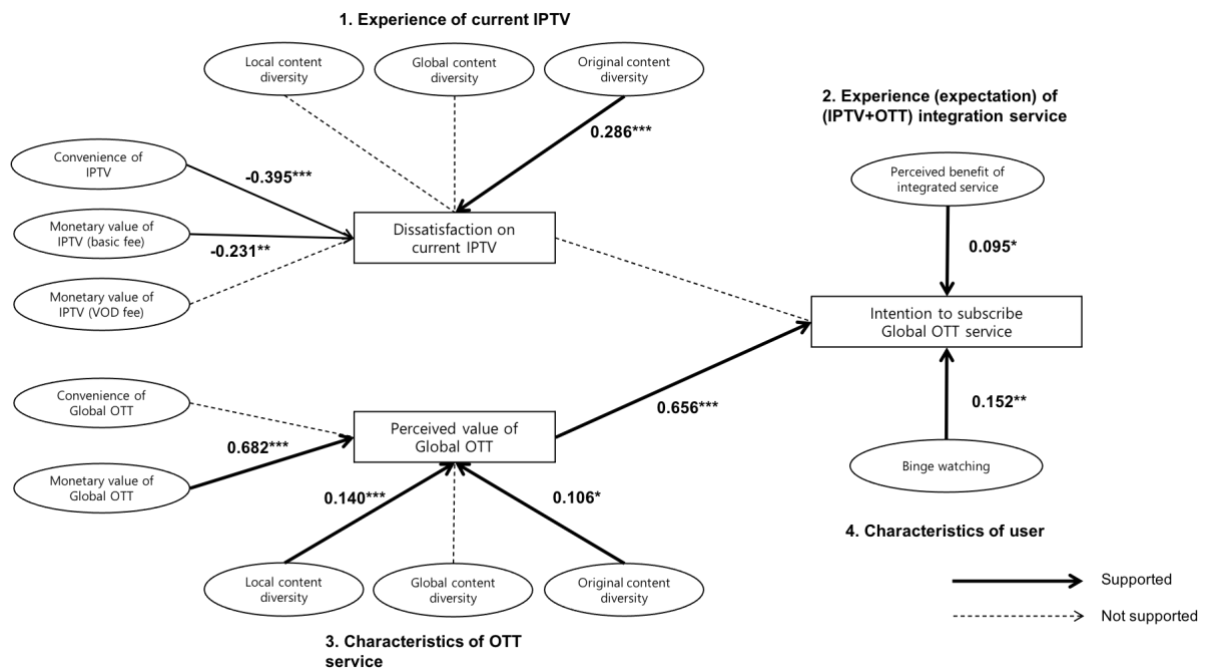


Fig 2. Result of research model (All users).

Regarding the experience of current IPTV-related hypotheses, the convenience of IPTV and monetary value of IPTV (basic fee) have negatively impact users' dissatisfaction with IPTV supporting H4 ($\beta = -0.395$, $p < 0.001$) and H5 ($\beta = -0.231$, $p < 0.001$). On the other hand, the original content diversity of IPTV has a positive impact ($\beta = 0.286$, $p < 0.001$) on it as opposite of expectation. Furthermore, users' dissatisfaction with IPTV does not have an influence on users' intention to subscribe to global OTT.

For characteristics of global OTT, local content diversity of global OTT ($\beta = 0.14$, $p < 0.001$), original content diversity of global OTT ($\beta = 0.106$, $p < 0.001$), and monetary value of global OTT ($\beta = 0.682$, $p < 0.001$) have a positive impact on the perceived value of global OTT. Users' perceived value of global OTT has a positive influence on intention to subscribe to global OTT service ($\beta = 0.656$, $p < 0.001$). In addition, users' perceived benefit of integrated service ($\beta = 0.095$, $p < 0.001$) and binge-watching ($\beta = 0.152$, $p < 0.001$) have a positive impact on intention to subscribe to global OTT service as well.

This study conducted the bootstrapping test of another two models separating the main research model into two groups: Netflix user group and non-Netflix user group. As shown in figure 3 and figure 4, the original content diversity of IPTV has also impacted both Netflix users' and non-Netflix users' dissatisfaction with IPTV. In addition, the convenience of IPTV influence both groups, Netflix users' and Non-Netflix users' dissatisfaction with IPTV. Based on the perceived value of global OTT, the perceived value of global OTT has an influence on both Netflix's and non-Netflix's intention to subscribe to global OTT.

From the path analysis, there is some difference between Netflix users and non-Netflix users. For example, the monetary value of the basic fee of IPTV does not negatively impact on non-Netflix users' dissatisfaction with IPTV but on Netflix users ($\beta = -0.248$, $p < 0.05$). Moreover, binge-watching orientation positively impacts on non-Netflix users ($\beta = 0.217$, $p < 0.001$) but not on Netflix users.

Also, this study asked about the intention to exit the current OTT (Netflix) only for Netflix users and analyzed the relationship between intention to subscribe to global OTT and exit of it. As a result, Netflix users' intention to subscribe to global OTT has a positive impact on intention to exit, supporting H16 ($\beta = 0.213$, $p < 0.05$).

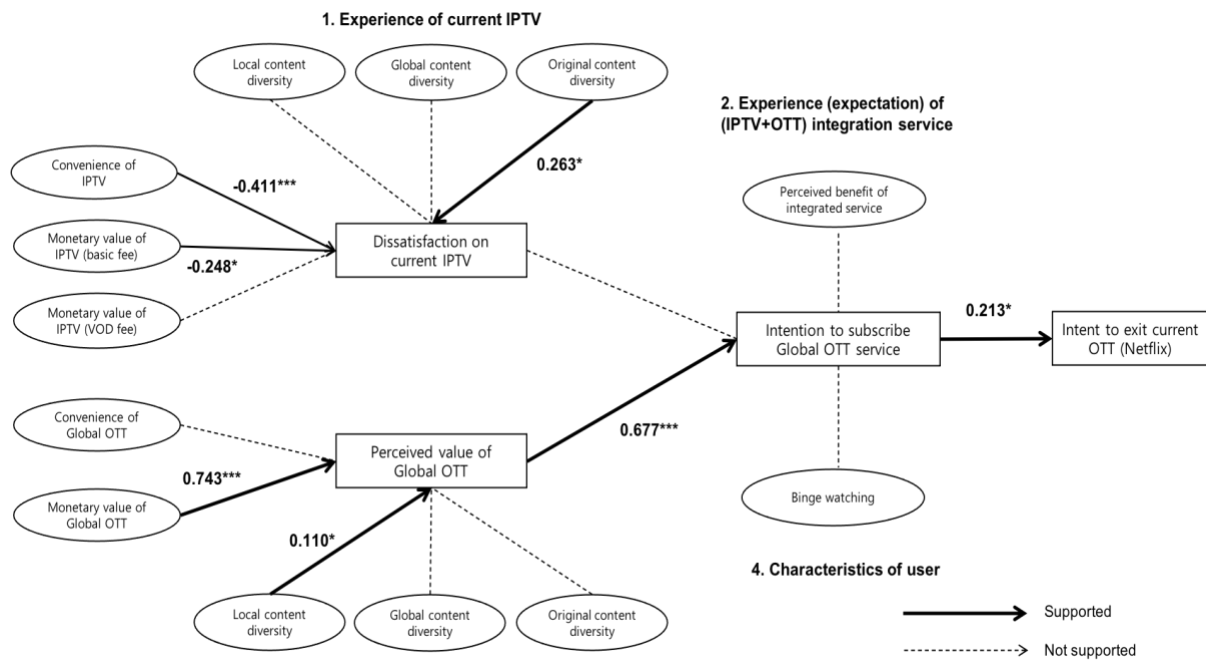


Fig 3. Result of research model (Netflix users).

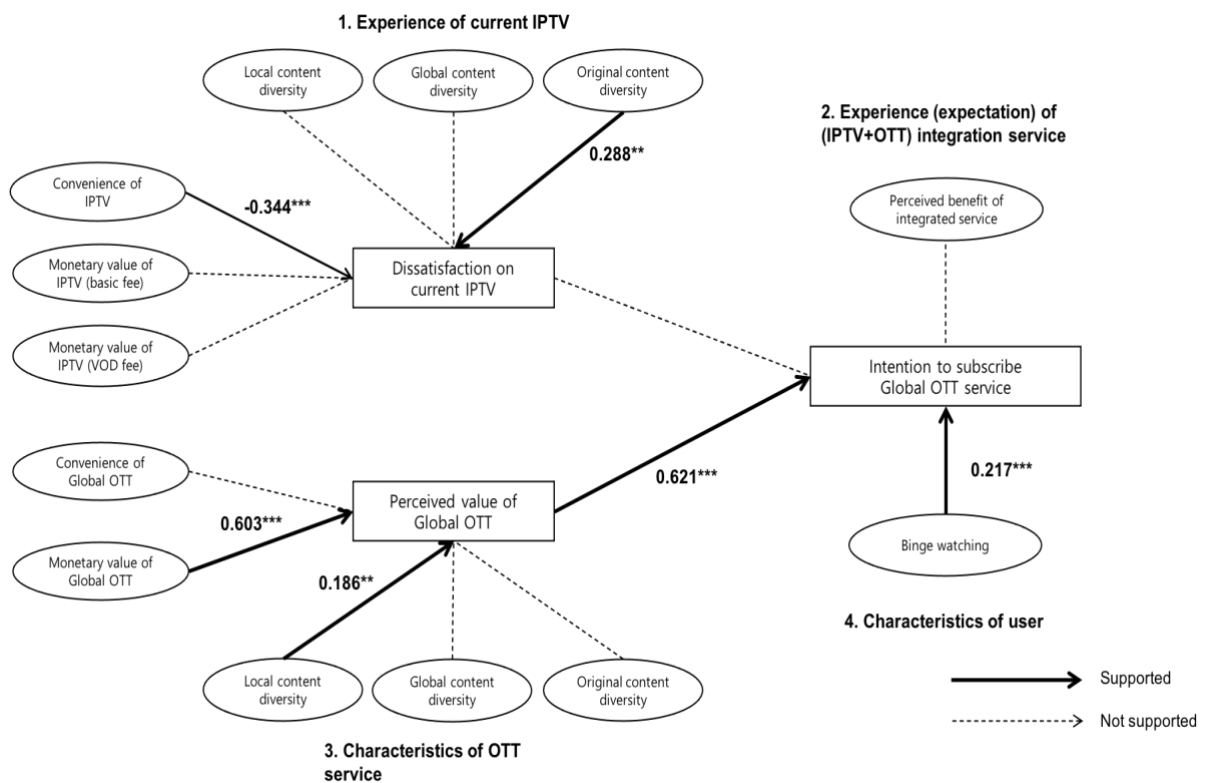


Fig 4. Result of research model (Non-Netflix users).

5. Discussion and conclusion

The purpose of this study is to find out the academic and practical implications of integrated services provided by global OTT services in cooperation with local IPTV service providers and users' responses to it while global OTT services are trying to expand their business territory to diverse local markets.

Unexpectedly, users' discontent with IPTV does not appear to affect intention to subscribe to global OTT service additionally. It implies that IPTV users would not want or expect to compensate for their dissatisfaction with IPTV with global OTT service. In other words, even though Disney Plus would offer exclusive Disney content that is not easy to watch on current IPTV or another platform, IPTV may also be perceived as a window for access to local or global content that is difficult for Disney to provide. Thus, the two services could be recognized as platforms with different content. Therefore, IPTV's provision of OTT integrated services does not strengthen the substitutive relationship between IPTV and the global OTT platform, indicating that the concern about the weak competitiveness of local media services by global operators from KBA would not fit in an actual field environment. Rather, these concerns and excessive regulation on the media industry would hinder the pure competition or users' benefit from diverse strategic cooperation from media platforms. However, the premise of this expectation is that local content providers, including IPTV service, should continue to provide their competitive and unique contents that cannot be offered by global media platforms to hold their users and relative competitiveness.

Regarding the experience of current IPTV, the convenience of IPTV that users perceive is the most important factor influencing users' dissatisfaction among IPTV-related variables. It shows that how convenient IPTV is to operate, search, and recommend personalized content to users well would be more important for the user to satisfy on IPTV

service than other contents or monetary values. Contrary to the proposed hypothesis of this study, the higher the diversity of original contents of IPTV, the higher the user's dissatisfaction. Regardless of the diversity of IPTV's original content, users are negatively aware of IPTV's original content itself, which may have led to their dissatisfaction. It could mean that IPTV service providers over-producing original content without sufficient content production capacity. Thus, securing original content is an important factor for platform operators. However, if they do not have the capability to make it, it may be necessary to partner with or license content production companies rather than self-production. In addition,

As expected, the perceived value of global OTT service has emerged as a major factor affecting IPTV users' intention to subscribe to additional global OTT services. Even with the integrated services, the main reason for paying more fees for the platform would be based on the global platform's value itself.

Regarding factors related to characteristics of OTT service influencing this perceived value of global OTT service, the monetary value of service was the most influential factor in the value perception of Disney Plus. Currently, the price of a service that is available for four people at the same time in Australia is about 10\$ to 12\$, and Disney is recognized as a service with a high price advantage in a lot of countries, which can be expected to be reflected by South Korean IPTV users. This may have been especially important in the fact that streaming services offer unlimited access to content at a lower price when traditional IPTV users are paying relatively higher basic and additional VOD fees than OTT services. IPTV operators are expected to be able to effectively offer economical plans affiliated with Disney Plus after it begins its service in South Korea.

As this study proposed, the diversity of original content of global OTT service appears to affect the value of Disney Plus recognized by users as well. Currently, local IPTV

subscribers are looking forward to new content such as Disney's Marvel, Pixar, National Geographic, and so on. In addition, the diversity of Disney Plus's local (South Korean) content appears to have the greatest impact on the perception of value for Disney Plus among contents related factors. This can be interpreted as IPTV users currently have high expectations for the provision of local content that Disney Plus can provide after contracting with South Korean content providers. This is not just from an expectation of Disney's own capability, but also it might be based on the common expectation toward the global OTT platforms like Netflix and Amazon prime that have provided diverse contents of local broadcasters with localization strategies. Therefore, the global OTT platforms entering the new local market need to prepare not only their original content but also local content by a partnership with content distributors or productions in the local market.

However, the convenience of global OTT service has not been shown to affect the perception of its value. Since the convenience is not easy to evaluate the value of it, It would have been attributed to users' lack of experience with Disney's own platform and their inability to demonstrate Disney Plus in person. The benefits from integrated service are also a significant factor to intention to subscribe to the global OTT service through IPTV. It means that simplified payments and convenient N-screen features could be practically useful for IPTV users who would want to subscribe to global OTT service through IPTV.

This study has some academic implications and contributions. First, this study conceptualized the new phenomenon of combining global OTT service with local IPTV service and analyzed actual users' perceptions of it. In addition, this study sought to understand the concept of subscribing and using global OTT service through IPTV by considering both IPTV and OTT service-related researches. The results of this study could be helpful for pay-TV service providers to recognize the need and direction of a strategic partnership with global OTT

services. In addition, this study is expected to help OTT practitioners in that it predicted in advance the importance and consequences of strategic alliances with global OTT service that also could be considered as a competitor in the local market.

However, this study is hard to free from some limitations. First of all, the participants of the survey are all U+tv, so it could have some limitations to generalize the results. Subsequently, it is expected that it will be possible to identify differences in perceptions of integrated services between groups of users through subsequent studies. The study also has limitations in that it is not an actual experience with Disney Plus but rather data collected based on the expectations held by survey participants. Therefore, if Disney Plus launch in South Korea in the future and starts a partnership with local IPTV service operators, it will be necessary to learn more about the actual users' experiences related to it.

References

- Ahn, J. H., Han, S. P., & Lee, Y. S. (2006). Customer churn analysis: Churn determinants and mediation effects of partial defection in the Korean mobile telecommunications service industry. *Telecommunications policy*, 30(10-11), 552-568.
- Baek, B-Y. (2020). KT's partnership with Netflix raises criticism. *The Korean Times*. Retrieved From https://www.koreatimes.co.kr/www/tech/2021/02/133_294527.html
- Barclay, D., Higgins, C., & Thompson, R. (1995). The partial least squares (pls) approach to casual Modeling: Personal computer adoption and use as an illustration.
- Bansal, H. S., Taylor, S. F., & James, Y. S. (2005). “Migrating” to new service providers: Toward a unifying framework of consumers' switching behaviors. *Journal of the Academy of Marketing Science*, 33(1), 96–115.
- BCG. (2020). Can Subscription Video Providers Hold On to Their New Customers? Retrieved from <https://www.bcg.com/en-kr/publications/2020/can-subscription-video-providers-hold-on-to-their-new-customers>
- Bouwman, H., Zhengjia, M., Van der Duin, P., & Limonard, S. (2008). A business model for IPTV service: a dynamic framework. *Digital Policy, Regulation and Governance*, 10(3), 22-38.
- Cha, J. (2013). Predictors of television and online video platform use: A coexistence model of old and new video platforms. *Telematics and Informatics*, 30(4), 296-310.
- Chen, Z., & Dubinsky, A. J. (2003). A conceptual model of perceived customer value in e-commerce: A preliminary investigation. *Psychology & Marketing*, 20(4), 323-347.
- Chen, Y. N. K. (2019). Competitions between OTT TV platforms and traditional television in Taiwan: A Niche analysis. *Telecommunications Policy*, 43(9), 101793.
- Cho, Y. C., & Song, J. (2012). The effects of customer dissatisfaction on switching behavior in the service sector. *Journal of Business & Economics Research (JBER)*, 10(10), 579-592.
- Daidj, N., & Egert, C. (2018). Towards new coopetition-based business models? The case of Netflix on the French market. *Journal of Research in Marketing and Entrepreneurship*, 20(1), 99-120.

- Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the association for information systems*, 4(1), 7.
- Gehrt, K. C., Yale, L. J., & Lawson, D. A. (1996). The convenience of catalog shopping: Is there more to it than time?. *Journal of Direct Marketing*, 10(4), 19~28.
- Gummesson, E. (2007). Exit services marketing-enter service marketing. *Journal of customer behaviour*, 6(2), 113-141.
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial Management & Data Systems*, 166(1), 2-20.
- Igaworks. (2020). OTT industry analysis. *Igaworks blog*. Retrieved from <https://www.igaworksblog.com/post/ott-%EC%8B%9C%EC%9E%A5-%EB%B6%84%EC%84%9D-1-000%EB%A7%8C-%EC%82%AC%EC%9A%A9%EC%9E%90-%EB%8F%8C%ED%8C%8C-%EB%84%B7%ED%94%8C%EB%A6%AD%EC%8A%A4>
- IITP. (2020). Trend of South Korean OTT service and 5G technology after pandemic. *Weekly ICT trends*, 1965, 2-15.
- Jenner, M. (2016). Is this TVIV? On Netflix, TVIII and binge-watching. *New media & society*, 18(2), 257-273.
- Jin, J., & Lee, D. W. (2009). An Empirical Study on Consumer's Continued Use of IPTV Service. *Journal of Information Technology Services*, 8(1), 11-27.
- KCC. (2020). Investigation of Broadcasting Media Usage 2020.
- Kerin, R. A., Jain, A., & Howard, D. J. (1992). Store shopping experience and consumer price-quality-value perceptions. *Journal of retailing*, 68(4), 376.
- Kim, E-J. (2021, January 21). Netflix Still Using Networks for Free, *Business Korea*. Retrieved From <http://www.businesskorea.co.kr/news/articleView.html?idxno=58871>

- Kim, H. (2021, January 11). [5 years into Netflix] Investing \$770 billion and targeting South Korean markets by supplying 4,500 contents. *The Korea Economic Daily*. Retrieved From <https://url.kr/38e5mb>
- Kim, H. W., Chan, H. C., & Gupta, S. (2007). Value-based adoption of mobile internet: an empirical investigation. *Decision support systems*, 43(1), 111-126.
- Kim, J., Kim, S., & Nam, C. (2016). Competitive dynamics in the Korean video platform. market: Traditional pay-TV platforms vs. OTT platforms. *Telematics and Informatics*, 33(2), 711-721.
- Lee, D., Son, I., Yoo, M., & Lee, J. H. (2011, January). Understanding the adoption of convergent services: the case of IPTV. In *2011 44th Hawaii International Conference on System Sciences*, 1-10.
- LG Uplus. (2021). LG Uplus report 2020 4Q
- Li, S. C. S. (2017). Television media old and new: A niche analysis of OTT, IPTV, and digital cable in Taiwan. *Telematics and Informatics*, 34(7), 1024-1037.
- Lin, T. C., Wu, S., Hsu, J. S. C., & Chou, Y. C. (2012). The integration of value-based adoption and expectation–confirmation models: An example of IPTV continuance intention. *Decision Support Systems*, 54(1), 63-75.
- Ministry of Science and ICT. (2020). Announcement of the number of paid -TV subscribers and market share in the 1Q 2020. Retried from <https://www.msit.go.kr/bbs/view.do?sCode=user&mId=113&mPid=112&pageIndex=1&bbsSeqNo=94&nttSeqNo=3176788&searchOpt=ALL&searchTxt=2020%EB%85%84+%EC%83%81%EB%B0%98%EA%B8%B0+%EC%9C%A0%EB%A3%8C%EB%B0%A9%EC%86%A1+%EA%B0%80%EC%9E%85%EC%9E%90+%EC%88%98+%EB%B0%8F+%EC%8B%9C%EC%9E%A5%EC%A0%90%EC%9C%A0%EC%9C%A8>
- Mittal, V., Kumar, P., & Tsiros, M. (1999). Attribute-Level Performance, Satisfaction, and Behavioral Intentions over Time: A Consumption-System Approach. *Journal of Marketing*, 63(2), 88-101.

- Tefertiller, A. (2018). Media substitution in cable cord-cutting: The adoption of web-streaming television. *Journal of Broadcasting & Electronic Media*, 62(3), 390-407.
- Panther, T., & Farquhar, J. D. (2004). Consumer responses to dissatisfaction with financial service providers: an exploration of why some stay while others switch. *Journal of Financial Services Marketing*, 8(4), 343-353.
- Ping, R. A. (1994). Does satisfaction moderate the association between alternative attractiveness and exit intention in a marketing channel?. *Journal of the Academy of Marketing Science*, 22(4), 364-371.
- Park, E. A. (2017). Why the networks can't beat Netflix: Speculations on the US OTT services market. *Digital Policy, Regulation and Governance*.
- Singh, J. (1990). Voice, exit, and negative word-of-mouth behaviors: An investigation across three service categories. *Journal of the academy of Marketing Science*, 18(1), 1-15.
- Werts, C. E., Linn, R. L. & Jöreskog, K. G. (1974). *Measurement in the Social Sciences: Theories and Strategies*. Chicago: Aldine-Atherton.
- Yoo, J., & Park, J-Y. (2018). A Study on the Factors Influencing Continuous Usage Intension based on OTT Service User. *Journal of Broadcasting and Telecommunications Research*, 2018(4), 46-79.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *Journal of marketing*, 52(3), 2-22.