

Featured Translated Research Outside the Anglosphere

Eun Yu, Haeyeop Song*, Jaemin Jung and Young ju Kim

Perception and attitude toward the regulation of online video streaming (in South Korea)

A comparison between users and non-users

<https://doi.org/10.1515/omgc-2023-0059>

Received December 2, 2023; accepted December 2, 2023

Abstract: As the production and consumption of live video streaming have increased, a general concern is that live video streaming might yield social problems. This paper investigated how people perceived the current status of live video streaming through a nationwide survey. The survey was conducted with 825 users and 335 non-users in South Korea. The results demonstrate that people perceived live video streaming has more impact on adolescents than themselves, which confirms that the previous study of third-person perception. Respondents also evaluated that the current self-regulatory system is not functioning properly and regulation of live video streaming is required. Especially non-users are more supportive of regulation than users. The perception bias, the difference between the perceived influence on self and adolescents, is the strongest predictor of the need for regulation. Because of the difference between users and non-users regarding the perception of live video streaming, this study recommends that the policymakers should consider the actual status of live video streaming and not perception-based biases in orienting regulation.

Article note: This article was originally published in *Korean Journal of Broadcasting and Telecommunication Studies* (2019), May, p. 108–140. Permission to translate by *Korean Association for Broadcasting & Telecommunication Studies*. Translators: Huifang Chen and Gefei Suo. Copy editor: Dane Claussen.

***Corresponding author: Haeyeop Song**, Department of Media and Culture, Kunsan National University, Gunsan, South Korea, E-mail: hysong@kunsan.ac.kr

Eun Yu, Samsung Electronics Co., Ltd., Hwaseong, South Korea, E-mail: eun.yu@samsung.com

Jaemin Jung, Moon Soul Graduate School of Future Strategy, KAIST, Daejeon, South Korea, E-mail: nettong@kaist.ac.kr

Young ju Kim, Korea Press Foundation, Seoul, South Korea, E-mail: kyj@kpf.or.kr

Keywords: live video streaming; government regulation; self-regulatory system; third-person effect

1 Introduction

Personal broadcasting content created by the public and distributed via the Internet is altering the conventional broadcast content market. The widespread availability of production tools for video editing and the proliferation of online distribution platforms have cultivated an environment where individuals can produce and share videos. YouTube, a significant online video platform worldwide, distributes videos produced by individuals. The platform originated from a 16-s video clip of a zoo taken by the co-founder, Jawed Karim, in April 2005, and has since become the largest online video portal where videos from different parts of the world are collected. As of May 2018, YouTube boasted 1.8 billion monthly users, who spend over 1 billion hours watching videos per day, officially used in 91 countries (Statista 2018; YouTube 2019). The content available on the platform ranges from a six-year-old child's dancing videos to music videos from idol groups that dominated the Billboard charts, political commentary from progressive and conservative camps, learning and educational resources, stocks and financial information, as well as content related to food, music, dance, fashion, beauty, games, and pets.

As the quantity of user-generated online video content expands, the media consumption landscape is undergoing transformation. Results from a survey carried out during December 2018 and January 2019 on 2,000 PC and mobile Internet users in Korea indicated that 48.7 % of users predominantly viewed videos on mobile devices, with 16.1 % exclusively utilizing mobile devices. Among respondents, individuals aged 10–20 years old spent the longest time viewing videos daily, with an average of 3 h and 46 min. Furthermore, those surveyed employed video services not only for watching, but also for music (66.7 %) and information retrieval (44.9 %) (NASMEDIA 2019). Networking solution provider Cisco predicted that in 2016, web video watching accounted for 73 % of global web traffic. This figure was expected to rise to 82 % of overall traffic by 2021. Additionally, by 2021, the number of users watching online videos was predicted to reach 1.9 billion, which would amount to five million years if the amount of online video they use per month is converted into time (Cisco 2017).

As the production and consumption of online video content grew, live video streaming emerged as a new industry, contributing significantly to the overall expansion of the online video market. Na Dong-hyun, also known as “Big Library” online, first gained prominence as a game commentator on Afreeca TV, a live video streaming platform, but has since moved his focus to YouTube, where he boasts over 1.8 million subscribers. During an appearance on a TV variety show, he disclosed

earning an annual salary of 1.7 billion won (about US\$1.26 million). Afreeca TV, which established a business model in which viewers donate paid items to broadcast hosts during real-time broadcasts, has expanded into a listed firm with sales worth 126.6 billion won (about US\$94 million) as of 2018 (Afreeca TV 2019), and overseas platforms, including Twitch and Facebook, have subsequently implemented this model. Streamers utilize video platforms to stream live content, enabling them to monetize their videos through advertising and subscription programs, which distinguishes streamers as an emerging niche profession. Due to the influence acquired through personal Internet broadcasting, streamers have increasingly become present in traditional broadcasting media, often as advertising models. As live video streaming became more prevalent and new stars arose, the Multi Channel Network (MCN) industry was formed to assemble these personal broadcasters to strategize, create, promote, distribute, manage intellectual property, and generate revenue.

As the impact of live video streaming has increased, numerous concerns have been raised about social dysfunction. In the 2017 survey, 43.5 % of respondents reported a negative overall perception towards personal broadcasting, and 72 % expressed support for regulating sensational or violent content within this form of media (DOIT survey 2017). To get more paid items and attract more views, some live video streaming hosts attempt to generate stimulating material. Some live broadcasts have even shown extreme scenes of driving on highways at speeds of up to 200 km per hour or jumping from high buildings resulting in death. Rude talk, disparaging remarks against specific groups and cases of sensational and violent content are also constantly being reported through news media. In the absence of special measures, these problems are repeated. Notably, voices are calling for fundamental measures as children and adolescents view and even produce live video streaming without regulation.

Currently, live video streaming is not classified as “broadcasting” under the law. This is because live video streaming users view it as distributed through the Internet network, even though they consume live video streaming in the same way as traditional broadcasts. Live video streaming practitioners are regarded as supplemental communication practitioners under the Telecommunications Business Act, thus making it unfeasible to regulate them under the different laws governing practitioners of the Broadcasting Act. Ultimately, the side effects of live video streaming persist, despite self-regulation by respective platform operators to penalize personal broadcasters for disseminating illicit and harmful content and engaging in transgressive actions.

This study aims to investigate the impact of live video streaming and perceptions of restrictions. In previous studies related to media effects, the literature about the third-person effect suggests that individuals tend to recognize others as more vulnerable to the influence of mass media than themselves, and that such biased

perceptions can lead to a tendency to support actions such as restrictions. Based on findings from a survey of 1,160 users and non-users, this study confirms the general public's knowledge regarding the impact and limitations of live video streaming on the Internet, as well as the differences between users and non-users. The study proposes policy implications for future limitations on live video streaming by confirming the general public's awareness of the current restriction scheme.

2 Theoretical background

2.1 Definition and classification of Internet personal broadcasting

Live video streaming refers to a free or paid service in which one or more hosts provide various genres of content online, such as games, talks, music, sports, and education, in real-time or non-real-time (Video On Demand, VOD) (Choi 2016). "Personal" refers to content producers that have fewer members than existing companies such as TV stations, but emphasizes that ordinary people who used to be viewers have become amateur content producers (Shim 2014). Live video streaming can be distinguished from existing broadcasting. The Broadcasting Act defines "broadcasting" as "planning, organizing, or producing broadcasting programs and transmitting them to the public (viewers) by telecommunication facilities." However, viewers of live video streaming can not only receive but also transmit, and do not require equipment such as television or radio (Kim 2016). Therefore, according to the current law, live video streaming is not "broadcasting," but a type of online video service that distributes personal content on the Internet, similar to blog and podcast.

Overseas, the term live video streaming is mainly used because of the concern for the real-time nature of Internet personal broadcasting, which is also known as live video streaming, live video broadcasting, and social live streaming. The characteristics of live video streaming are that broadcast hosts share videos in real time, and that users can watch videos and interact with hosts or other viewers at the same time (Hamilton et al. 2014; Hu et al. 2017).

In this study, live video streaming is considered to be individuals providing video content over the Internet as creators. In other words, it is defined that one or more hosts – YouTuber, creator, streamer, broadcasting jockey – provide various types of content, including games, talks, reviews, music, current affairs information, education, beauty, fashion, and sports, to Internet users in the form of streaming or edited videos (VOD) through online platforms such as YouTube, Afreeca TV, and Facebook.

2.2 Influence and social discussion of Internet personal broadcasting

Live video streaming has shown strong competitiveness due to its unprecedented form and content, as well as the diversity of its producers, which cover a wide range of ages and experience. There are also an increasing number of cases in which public broadcasters produce content in the form of personal broadcasting, or invite famous live video streaming producers, known as influencers, to organize new programs. The popularity and influence of live video streaming can be seen when primary school students put YouTubers alongside athletes and singers in their top 10 most wanted jobs (South Korea's Ministry of Education 2018).

However, as the influence of live video streaming grows, voices of concern emerge about its social dysfunction. First, the most controversial content is violent and provocative content. In real-time personal broadcasting, abusive language spoken by the host to other hosts or third parties is delivered to users without editing. It is not difficult to find sadistic contents that people use to assault each other in the broadcasts. Adolescents who watch this content imitate this behavior without sensing any problem or simply uncritically accept abusive language and hate speech (Kim 2017). Second, some content is pornography or illegal filming that violates the harmful information regulations of the Act on Information and Communications Network and other current laws. According to Korea Communications Standards Commission's 2018 sanctions on personal broadcasting, 78 out of 82 cases are related to obscene broadcasting (Park 2019). Copyright infringement is also a point of contention, with personal broadcasters making financial gains from secondary creative works not authorized by copyright holders. Third, certain content conveys false information. According to a survey conducted by the Korea Press Foundation, 34 % of respondents had received or watched videos that presented false information or fake news (Yang and Oh 2018). In this case, many users prefer to trust the live video streaming hosts and do not report false information before confirming the authenticity of the information. In addition, it is difficult to prevent false information from spreading because it takes time to confirm the facts. If the rights of specific individuals or corporation are not violated, it is difficult to take action because it is not clear who is harmed by the false information (Kim 2018).

This problem is caused not only by the deviation of individual content producers, but also by the business model of the live video streaming industry. Many online media rely on advertising exposure based on the number of users, which induces clicks with stimulating content, but the "sponsor" tends to intensify this problem in Internet personal broadcasting. The system in which users give personal broadcast producers sponsorships in real time or non-real time is a major business model of the

live video streaming industry, including Afreeca TV's star-balloon, YouTube's Super Chat, and Twitch's Donation. Since profits are split between the platform and the producer at a certain ratio, stimulating content that induces user sponsorship is beneficial not only to the producer, but also to the platform. Even if a producer is sanctioned for causing problems on one platform, he can also distribute contents on another platform without any restrictions, which also leads to the continuous social controversy over Internet personal broadcasting. Thanks to this controversy, calls for regulating live video streaming are also growing, and various stakeholders, including the live video streaming industry and the Korea Communications Commission, are discussing various measures.

2.3 Regulation of Internet personal broadcasting

2.3.1 Contents of current regulations and related laws

Live video streaming is not legally included in the category of "broadcasting" subject in the Broadcasting Act, and live video streaming operators are value-added telecommunications operators that provide telecommunication services according to the Telecommunications Business Act. Value-added telecommunications operators can enter the market only by reporting finances, but if the capital is less than 100 million won (about US\$74,170), the obligation to report is exempted, so there is no barrier to entering the market. Therefore, live video streaming operators do not bear various legal regulations imposed on broadcasters under the Broadcasting Act, such as public responsibility, entry regulations, restrictions on business qualifications, broadcast deliberation obligations, grade classification obligations, and broadcast preservation obligations (Lee 2016). Instead, the contents of live video streaming are subject to some degree of regulation under the Act on Promotion of Information and Communications Network Utilization and Information Protection (Act on Information and Communications Network for short) and the Child and Act on the Protection of Children and Youth against Sex Offenses (Act on Youth Protection for short) (see Table 1).

2.3.2 Public regulation of Korea Communications Standards Commission

The current regulations on live video streaming can be largely divided into public regulations of Korea Communications Standards Commission and self-regulation of individual business operators. The live video streaming deliberation process of the

Table 1: Laws and contents related to the regulation of online video streaming.

	Contents	Applicable law
Law status	Value-added telecommunications operators providing telecommunication services	Telecommunications Business Act
Market entry	Reporting system	Act on Information and Communications Network
	– The obligation to report is exempted if the capital is less than 100 million won (about 74,170 dollars).	
	– Special types of online service providers need not to report but to register	
Content deliberation	Illegal information	Act on Information and Communications Network; Act on Youth Protection
	Harmful content media for adolescents	
Ways of deliberation	Post deliberation on whether it is illegal or not	Act on Information and Communications Network;
		Act on Youth Protection

Korea Communications Standards Commission follows the general communication deliberation process and is conducted by voluntary reporting by users or via monitoring by the deliberating agency. During this process, users’ reports are made directly on the platform, but the users can also report complaints through the Korea Communications Standards Commission. However, if the informant does not present relevant evidence, it is difficult to review the broadcasting contents, so the problem is that practical deliberation and regulation are difficult to conduct if live video streaming contents are not recorded in real-time. As a result of the deliberation, the Korea Communications Standards Commission can give “self-regulation recommendations” or “correction requests” to operators who are not content producers, such as blocking the distribution of content within the service or sanctioning content producers. However, the self-regulation recommendation does not obligate operators to reply to a request; though the operator is required to reply to the correction request, there is no penalty for non-compliance except in special cases specified in the law (see Table 2). It has been pointed out that public regulation is less effective because there is no legal enforcement against operators, but there are also several criticisms of calls for strengthening public regulation, including ambiguity in regulatory standards, concerns about infringement of expression freedom, lack of institutional mechanisms for user protection, and inefficiency of public regulation (Hwang 2005; Ji 2009; Lee et al. 2016b).

Table 2: Current public regulations on online video streaming.

Main agent of regulation	Korea Communications Standards Commission
Basis of regulation	Act on Information and Communications Network
Object to regulation	Illegal information and harmful content media for adolescents
Ways of regulation	Post regulation deliberation
Procedure of deliberation	Users reporting; Complain to the relevant platform or complaint procedure of the Korea Communications Standards Commission; Monitoring by the regulatory authority deliberation organization
Dealing of deliberation	Recommendation of self-regulation Request for correction to platform service provider entrepreneur (administrative guidance)

2.3.3 Self-regulation of operators

Self-regulation of live video streaming is a system in which individual operators regulate illegal information and harmful material for young people with terms of use and their own guidelines. Deliberations will be conducted through individual contracts of the terms of use, self-monitoring and user declarations, and the results of the deliberations will be handled through measures such as self-deletion and cutting off of questioned content, suspension of use of questioned content, or permanent suspension and cancellation of the use (see Table 3). Because of the quantitative increase in content produced by online personal broadcasters, the real-time delivery, and the volatility of content, it is difficult for public regulation to cover the costs of post-deliberation, and the controversy over censorship is inevitable. As a result, self-regulation is inevitable in the case of live video streaming content. In general, self-regulation is used transitionally in the process of easing regulations when it is difficult to ensure the effectiveness of public regulation without utilizing industry expertise (Hwang 2014).

Table 3: Current self regulations on online video streaming.

Main agent of regulation	Platform service provider
Basis of regulation	Terms of use/self guidelines
Object to regulation	Illegal information and harmful content media for adolescents
Ways and procedure of regulation	Individual contracts for terms of use Self monitoring Users reporting
Dealing of deliberation	Self-deletion and blocking of relating content, suspension of use of questioned content Permanent banning of using and rescission

However, by choosing and implementing only self-regulation, it is difficult to maximize market functioning and autonomy, to protect freedom of expression and to protect users (Lee 2016). Concerns exist that private companies will become direct actors in regulating individual expression and that their influence will become excessive. There is also the problem of reverse discrimination against domestic operators because foreign operators cannot be regulated with the same standard (Lee et al. 2016b). Self-regulation is based on individual operators and not on common standards in the live video streaming industry, so the level of regulation is different for each operator and the standards and principles are not clear. Therefore, the problem with the current self-regulation of live video streaming is that self-regulation alone cannot have legal or equivalent effects unless the regulatory body recognizes the standards set by the industry and uses some form of coercion to enforce those standards.

When discussing self-regulatory methods, it is important that live video streaming users create new service cultures and norms. In interactive media, users do not remain consumers of content, but appear as active participants, influencing the content of producers through feedback or challenging the way platform operators operate (Hwang and Choi 2001). Given that the negative side of live video streaming has received more attention in the past than the positive side, it is to be expected that non-users of live video streaming will perceive general regulation, but users may also share a similar awareness of problems with non-users and recognize the need for regulation when exposed to problematic content (Scharrer and Leone 2008).

The purpose of this study is to examine the perceptions of users and non-users of live video streaming in a situation where the influence of live video streaming is growing and social concern about negative content is increasing. In addition to observing the overall understanding of self-regulation and the need for regulation, we will also observe the differences in the perception of live video streaming between user and non-user groups, focusing on the third-person effect.

2.4 The third-person effect

Whenever a new kind of media emerges, there are always conflicting views of affirmation and denial about the media. For example, when the Internet emerged, there were positive expectations that new media could challenge political monopolies and boost civility (Rheingold 1993) and lead to socioeconomic change (Rifkin 2014). On the other hand, there were also views that the Internet was only a space where individual interests were pursued without encountering the perspective of other groups (Sunstein 2002), and that sensational and violent content would distort individuals and worsen emotions (O'Shaughnessy et al. 2016). The views of live video

streaming are similar. The view that uncontrolled sensational content and violence will bring social problems coexists with the expectation that live video streaming allows individuals to directly connect and communicate with the public, bringing a variety of voices to society.

The audience's perception of the negative effects of media was made through the third-person effects in various fields. For example, the third-person effect was applied in the areas of online comments (Yu 2010), social commerce (Kim et al. 2011), and Internet games (Lee et al. 2016a) to examine the impact of new communication media on audiences. The third-person effect refers to a perceptual bias by which people think that 'other people' or 'the third person' will be more affected than 'me' when they perceive negative influences of the media. This is due to self-serving bias and ego-enhancement, and people think of themselves as superior to others and are better able to understand the intentions of the message. It is recognized that falling into self-superiority underestimates people's cognitive judgment of others and, therefore, they can be more easily persuaded by media messages (Davison 1983; Gunther 1991; McLeod et al. 1997). This perception of bias is reinforced when the situation of society is not ideal, such as the more negative expression of disgust towards pornography (Chia et al. 2004), antisocial lyrics (McLeod et al. 1997), religion, race, and socially disadvantaged groups (Jeong 2019), the more people worry about the effect of the media on others.

2.4.1 Characteristics and perception of audiences

Because the cognitive bias of media influence is based on the discriminatory perception that 'other' and 'me' are viewed differently, it is influenced by the characteristics of the audience and others perceived by the audience. Although it does not specifically define who 'the third person' is in the third-person effect, the degree of bias varies when evaluating the third party with any characteristics compared to 'me.' For example, bias is strengthened when the 'other' as a concept in contrast to 'me' is considered more incompetent than 'me,' such as the young, low-educated, or those lacking expertise or experience. In other words, people will overestimate the influence of the media that others receive when regarding 'me' as superior (Gunther 1995; Jung and Jo 2013). For example, people believe that the negative impact of malicious comments, including abusive language and personal attacks, is greater on minors than on adults (Yu 2010). As such, the third-person effect is based on comparisons between 'me' and others, and can be observed from the mid-teens when relative evaluations between 'me' and others are possible (Henriksen and Flora 1999). Therefore, even when assessing the influence of Internet personal broadcasting, people will perceive minors as having poorer judgment than themselves.

H1. The public will recognize that the influence of live video streaming is greater for children and adolescents than for themselves.

The social distance between the audience himself and the ‘other’ perceived by the audience also affects the biased perception. Social distance refers to the psychological and physical distance that the recipient feels from a third person. Audiences of live video streaming feel that they have closer social distance to certain people when they think they belong to the same group than others who do not, such as when they know each other, their school or residence is the same, or they support the same political party (Cohen et al. 1988; Duck et al. 1995; Joo 2005). When asked about the influence of the media, the third-person effect is differentiated according to the distance from others that the respondent perceives, and the effect is strengthened as the distance increases.

In a representative case, respondents said they felt social distance from others in order of students attending the same university, residents in the same area, and the public as a whole, and the farther the social distance was the media’s influence on others would be greater (Cohen et al. 1988). The degree of experience also affects cognitive bias through social distance, which can be seen in that when assessing the influence of video games received by video game players, respondents who hardly played games perceived players to be more easily influenced compared to respondents who played games regularly (Schmierbach et al. 2011).

As such, the perceived social distance between people themselves and others also affects the respondents’ cognitive bias. In the third-person effect, social distance can also be seen as the difference in experience due to the use and non-use of Internet personal broadcasting. In other words, people who do not use live video streaming would evaluate the use of live video streaming more negatively when evaluating the influence of Internet personal broadcasting. Therefore, there will be a difference between non-users and users’ responses to the influence of live video streaming on themselves. This impact is also expected to be seen when evaluating other groups who use Internet personal broadcasting.

H2.1. Non-users will perceive live video streaming as having less impact on themselves than users.

H2.2. Non-users will perceive live video streaming as having more impact on adolescents than users.

2.4.2 Behavioral consequences

The third-person effect believes that cognitive bias, which overestimates the media’s influence on others, can lead to actions (McLeod et al. 1997). People perceive

themselves to be able to see through and sufficiently resist the negative influence of the media, but others do not have this ability so they are easily agitated. Therefore, people tend to recognize that media regulations, including censorship, are necessary to protect others who are easily affected by negative messages. Media influence assessments due to third-person effects were based on negative communication messages such as alcohol, tobacco, gambling advertisements (Shah et al. 1999), loan business advertisements (Jung 2007), Internet pornography (Joo 2005), sensational scenes in movies (Rosenthal et al. 2018), and offensive political campaigns (Salwen 1998). In addition, studies on video games (Schmierbach et al. 2011) and online social networks (Dohle and Bernhard 2013) can also show that biased perceptions due to third-person effects lead to attitudes toward regulation.

The impact of cognitive bias on behavioral outcomes has been verified in several studies, but the relationship between regulatory attitudes and various variables such as demographic variables including gender, age, income and education level, authoritarian tendency and media usage was inconsistent. In particular, in the case of a media usage variable, its effect on regulation was different according to the research subjects and research methods. For example, the more frequently respondents played the game, the more they are in favor of regulation (Scharrer and Leone 2008), but the frequency of deputies' Internet use did not affect the strengthening of online media regulations (Dohle and Bernhard 2013). However, a study on existing broadcasting, which is similar to Internet personal broadcasting, found that the shorter the viewing time of violent TV programs, the more supportive the respondents were to the regulation (Hoffner et al. 1999). In this study, non-users would much more feel the need to regulate Internet personal broadcasting, as in other studies on the impact of the third-person effect on broadcasting regulation.

H3. Non-users will be more aware of the need to regulate live video streaming than users.

Differences in perceptions of media's influence on individuals and on third persons are widely used variables to predict behavioral outcomes in third-person effect studies. The difference between these two variables points to how large the cognitive bias the individual perceives (Schmierbach et al. 2008). In previous studies, these variables were also found to be variables that could predict the outcome of regulation, and the influence of these variables on regulatory prediction was different depending on who the third person was assumed to be (Jung and Jo 2013; Schmierbach et al. 2011). In other words, the more people realize that there are more influences on the third person, who is more vulnerable to negative media content than it is on themselves, the more they agree on the need for regulation. Therefore,

the greater the difference between the perception of the influence on individuals and the influence on the third person, the more people will agree on the need to online regulate personal broadcasting.

H4. The greater the difference in perception the public has regarding the influence on themselves and the influence on adolescents, the more likely they will agree with the regulation on online private broadcasting.

Based on these hypotheses, this study examines how people perceive the influence of live video streaming on themselves and others, focusing on the third-person effect on the influence of Internet personal broadcasting. It will also verify whether the perception of live video streaming can lead to an evaluation of live video streaming regulations, and whether there is a difference in this perception between users who actually use live video streaming and non-users who do not. Through these differences, we try to explore whether the general public's regulatory opinion on regulation is likely to be more distorted than it actually is, and seek ways to investigate the actual situation that may make necessary future regulatory policy making.

RQ1. How do people perceive the influence of live video streaming and the need for regulation?

RQ2. Does people's perception of live video streaming affect the need for regulation?

3 Research methods

3.1 Sample survey and questionnaire

User surveys on live video streaming were conducted online through MarketLink, a specialized research institution. Since there has never been a national sample survey on Internet personal broadcasting, a preliminary survey for sample allocation was conducted to confirm the percentage of live video streaming users. According to the survey results, 74.1 % of 700 respondents said they had watched live video streaming over the past year. The ratio of live video streaming users obtained from the preliminary survey was used to allocate users and non-users.

This survey used population-proportional allocation by gender and age considering the proportion of live video streaming users. A questionnaire was conducted for nine days from June 18 to June 27, 2018. The questionnaire was sent to

Table 4: Characteristics of respondents.

		Users		Non-users	
Sex	Male	455	55.2 %	168	50.1 %
	Female	370	44.8 %	167	49.9 %
Age	Late teens	74	9.0 %	13	3.9 %
	20s	188	22.8 %	35	10.4 %
	30s	180	21.8 %	65	19.4 %
	40s	190	23.0 %	106	31.6 %
	50s	193	23.4 %	116	34.6 %
Education level	High school degree or below	124	15.0 %	66	19.7 %
	Studying in university	92	11.2 %	12	3.6 %
	Undergraduate degree	534	64.7 %	223	66.6 %
	Graduate degree or above	75	9.1 %	34	10.1 %
Income	Less than 3 million won (about 2,320 dollars)	192	23.3 %	77	23.0 %
	3–6 million won (about 4,640 dollars)	429	52.0 %	188	56.1 %
	More than 6 million won	204	24.7 %	70	20.9 %
Total		825	100.0 %	335	100.0 %

17,000 people, of whom 34.4 %, or 5,854 people, opened the questionnaire. There were 4,403 respondents who could not participate because they were not subject to the survey, and 223 respondents could not participate because the assigned percentage of the respondents had already completed the questionnaire. Sixty-eight people gave up halfway. The final number of people completing the survey was 1,160 – 19.8 % of the people who opened the questionnaire.

Of the 1,160 respondents, 825 were live video streaming users and 335 were non-users (see Table 4). Of the users, 55.2 % were male and 44.8 % female, with 9.0 % in their late teens (over 15), 22.8 % in their 20s, 21.8 % in their 30s, 23.0 % in their 40s, and 23.4 % in their 50s. Of the non-users, 50.1 % were male and 49.9 % female, with 3.9 % in their late teens (over 15), 10.4 % in their 20s, 19.4 % in their 30s, 31.6 % in their 40s, and 34.6 % in their 50s.

3.2 The content of questionnaire

3.2.1 The influence of internet personal broadcasting

The questions on the impact of live video streaming consisted of two items: impact on individual media use and impact on adolescents. The impact on personal media use

was assessed using a five-point scale (1 = very much, 5 = not at all) through the inquiry, “The influence of live video streaming on me is not so great in comparison to existing TV broadcasts.” The impact on adolescents was assessed using a five-point scale (1 = very much, 5 = not at all) through the inquiry, “The influence of live video streaming on children and adolescents is not so great in comparison to existing TV broadcasts.” Two variables made up of reverse coding were recoded and used. From the recoded variables, the difference in perception in the two situations was examined by subtracting the value of the influence variable on oneself from the value of the influence variable on children and adolescents.

3.2.2 Awareness of regulation

The survey on awareness of restrictions asked about awareness of existing self-regulatory restrictions, the need for individual cases of restrictions, and the need for restrictions on Internet personal broadcasting. The perception of self-regulation was asked on a 5-point scale (1 = not at all, 5 = very much) in the question, “Do you think self-regulation is currently being implemented properly?” and the average was 2.35, confirming the overall perception that the current self-regulation is not appropriate. Consent to the individual regulation proposal was asked on a 5-point scale (1 = not at all, 5 = very much) in the question, “Personal broadcasting needs to be deliberated on public interest or publicity like TV broadcasting,” “Personal broadcasting should be mandatory to mark grades by age according to the degree of sensationality or violence in the content, like TV broadcasting,” “Personal broadcasting should be restricted during youth protection time like TV broadcasting,” “Personal broadcasting should be regulated so that the content and advertisement of the broadcast are clearly distinguished like TV broadcasting,” and “An upper limit should be placed on monetary sponsorship given to live video streaming hosts.” The questionnaire was composed based on the existing literature surveys of live video streaming and the contents discussed in the expert interviews (Park et al. 2017; Lee 2016; Lee et al. 2016a). Although there were differences by case, the average of all items exceeded 3.5, and the proportion of opinions agreeing to individual regulations was high. Awareness of general regulation was asked on a 5-point scale (1 = no at all, 5 = very much) in the question, “To what extent do you sympathize with the need for regulation on online video streaming?” and with an average of 3.89, and respondents thought more regulations were needed in the future. The statistical characteristics of the variables used in the analysis and the correlation between the variables are as follows (see Tables 5 and 6).

Table 5: Analysis of study data.

Variable	All			Users			Non-users		
	Average	Standard deviation	Min	Max	Average	Standard deviation	Min	Average	Standard deviation
Sex (1 = male)	1.46	0.50	1	2	1.45	0.50	1	1.50	0.50
Age	3.45	1.27	1	5	3.29	1.29	1	3.83	1.13
Education level	2.68	0.86	1	4	2.68	0.84	1	2.67	0.91
Income	2.00	0.68	1	3	2.01	0.69	1	1.98	0.66
Using experience (1 = users)	1.29	0.45	1	2					
Impact on individuals	2.65	0.95	1	5	2.83	0.90	1	2.22	0.92
Impact on adolescents	3.66	1.02	1	5	3.67	1.03	1	3.63	1.00
Adolescent-individual	1.01	1.34	-4	4	0.84	1.28	-4	1.41	1.39
Awareness of self regulation	2.35	0.83	1	5	2.42	0.86	1	2.18	0.74
Deliberation of public interest	3.73	0.95	1	5	3.64	0.96	1	3.93	0.90
Mark grades by age	4.09	0.88	1	5	4.00	0.92	1	4.33	0.73
Adolescent protection hours	3.92	1.00	1	5	3.81	1.04	1	4.18	0.85
Regulation of advertising	3.84	0.92	1	5	3.80	0.93	1	3.95	0.89
Maximum of sponsorship amount	3.59	1.06	1	5	3.52	1.08	1	3.73	1.01
Necessity of regulation	3.89	0.87	1	5	3.80	0.88	1	4.09	0.80
Observations				1,160				825	335

Table 6: Correlations.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Necessity of regulation	1.00								
(2) Sex	0.22 ***	1.00							
(3) Age	-0.02	-0.02	1.00						
(4) Education	0.00	-0.12 ***	0.19 ***	1.00					
(5) Income	-0.04	-0.04	0.19 ***	0.20 ***	1.00				
(6) Using experience	0.15 ***	0.05	0.19 ***	0.00	-0.02	1.00			
(7) Impact on individuals	-0.10 ***	0.00	-0.16 ***	-0.10 ***	-0.07 *	-0.29 ***	1.00		
(8) Impact on adolescents	0.24 ***	0.12 ***	-0.12 ***	-0.02	-0.07 *	-0.02	0.07 *	1.00	
(9) Adolescent-individual	0.26 ***	0.09 **	0.02	0.06	-0.01	0.19 ***	-0.65 ***	0.71 ***	1.00
(10) Awareness of self-regulation	-0.36 ***	-0.08 **	-0.05	-0.06 *	0.00	-0.13 ***	0.04 ***	-0.24 ***	-0.21 ***

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4 Results of research

4.1 Awareness of the influence of live video streaming of users and non-users

When asked about the impact of live video streaming on individuals, the overall response average for users and non-users was 2.65, and when asked about the impact on adolescents, the overall response average was 3.66 ($t = -25.62$, $p < 0.001$). This result supported H1 by showing that respondents perceived that live video streaming had a greater impact on children and adolescents than themselves (see Table 7).

When asked about the impact of live video streaming on individuals, the average of user responses was 2.83 and the average of non-user responses was 2.22, showing a statistically significant difference ($t = 10.40$, $p < 0.001$). In other words, H2.1 was supported by non-users' responding that they were not affected by live video streaming compared to users. However, when asked about the impact on adolescents, the average of user responses was 3.67 and the average of non-user responses was 3.63, showing no significant difference between the two groups, so H2.2 was rejected. In summary, when asked about the impact on individuals and society, the respondents who have not experienced live video streaming perceived that live video streaming had less influence than those who have used it. However, when asked about the impact of live video streaming on adolescents, both groups thought that live video streaming had a great influence on children and adolescents without any difference (see Table 8).

Table 7: Online video streaming influence assessment.

	Impact on individuals	Impact on adolescents	t	p
Average	2.65	3.66	-25.62	<0.001

Table 8: Online video streaming influence assessment (users/non-users).

	Average of users	Average of non-users	t	p
Impact on individuals	2.83	2.22	10.40	<0.001
Impact on adolescents	3.67	3.63	0.57	n.s.

4.2 Awareness of live video streaming regulations of users and non-users

When asked whether the regulation was working correctly for users and non-users regarding the current self-regulation, both users and non-users tended to think that the regulation was not properly implemented. However, non-users were more likely to respond that the current self-regulation did not work properly than users ($M_{\text{users}} = 2.42, M_{\text{non-users}} = 2.18, t = 4.49, p < 0.001$) (see Table 9).

When asked about the necessity of various regulations, non-users also answered that proper regulations on live video streaming were more necessary than users. In terms of the necessity of deliberation on public interest, the average of non-users was 3.93, which was higher than the users' average of 3.64 ($t = -4.74, p < 0.001$). In terms of the need for marking ratings for each age group, the average for non-users was 4.33, higher than the average for users, which was 4.00 ($t = -5.88, p < 0.001$). In terms of the need for youth protection time, the average of non-users was 4.18, higher than the average for users, which was 3.81 ($t = -5.74, p < 0.001$). In terms of the necessity of advertising regulation, the average of non-users was 3.95, higher than the average for users, which was 3.80 ($t = -2.52, p < 0.01$). In terms of the need to regulate the upper limit of sponsorship amount, the average of non-users was 3.73, showing a statistically significant difference compared to 3.52 on average for users ($t = -3.06, p < 0.01$) (see Table 10).

When asked about the need to restrict internet personal broadcasting, both groups expressed a common sense of the need for restrictions. However, in the case

Table 9: Awareness of current regulation.

	Average of users	Average of non-users	<i>t</i>	<i>p</i>
Awareness of self-regulation	2.42	2.18	4.49	<0.001

Table 10: Necessity of individual regulation.

	Average of users	Average of non-users	<i>t</i>	<i>p</i>
Deliberation of public interest	3.64	3.93	-4.74	<0.001
Mark grades by age	4.00	4.33	-5.88	<0.001
Adolescent protection hours	3.81	4.18	-5.74	<0.001
Regulation of advertising	3.80	3.95	-2.52	<0.01
Maximum of sponsorship amount	3.52	3.73	-3.06	<0.01

Table 11: Necessity of regulating online video streaming.

	Average of users	Average of non-users	<i>t</i>	<i>p</i>
Necessity of regulation	3.80	4.09	−5.096	<0.001

of non-users, the average response that regulation was needed was 4.09, which was statistically significantly higher than the average of 3.80 for users ($t = -5.096$, $p < 0.001$), and hypothesis 3 was supported (see Table 11).

According to RQ1, respondents recognized a great influence on adolescents in their perception of the influence of Internet personal broadcasting. However, there was a difference between users and non-users in the evaluation of influence on themselves. Compared to users, non-users recognized that they were not affected by Internet personal broadcasting. As for the perception of regulation, respondents recognized that the current self-regulation was not properly implemented, and overall, the need for regulation was also high. However, when comparing the regulation perception of users and non-users, non-users tended to view the current self-regulation as inadequate in comparison to users and were highly conscious of an overall necessity for regulation, including individual regulations.

4.3 Factors affecting the necessity of regulating internet personal broadcasting

Regression analysis was conducted to examine the factors affecting the necessity of regulating Internet personal broadcasting. Model 1 examined the impact of live video streaming on individuals and adolescents, and Model 2 tried to confirm the effect size by focusing on the difference in perception of the influence on individuals and adolescents.

Model 1 was found to have 20.8 % explanatory power. Among the social demographic variables included for model control, only gender was statistically significant, and women tended to perceive that regulation was necessary more than men ($\beta = 0.31$, $p < 0.001$). Age, income, and education level were not significant variables affecting the need for regulation.

The experience of using live video streaming was also a factor influencing the need for regulation. The group of non-users who do not use live video streaming was found to feel the need for regulation more, supporting H3 ($\beta = 0.17$, $p < 0.01$). Those who tended to perceive that the impact on individuals was small in the influence variables of live video streaming were more likely to recognize that regulation was

Table 12: Regression analysis of regulatory necessity: model 1.

Necessity of regulation	<i>B</i>	β	SE	<i>t</i>	<i>p</i>	95 % CI	
						LL	UL
Sex	0.31	0.18	0.05	6.76	0.00	0.22	0.40
Age	−0.03	−0.04	0.02	−1.56	0.12	−0.07	0.01
Education	0.02	0.02	0.03	0.58	0.56	−0.04	0.07
Income	−0.03	−0.02	0.03	−0.87	0.39	−0.10	0.04
Using experience	0.17	0.09	0.05	3.09	0.00	0.06	0.27
Impact on individuals	−0.08	−0.08	0.03	−3.04	0.00	−0.13	−0.03
Impact on adolescents	0.13	0.15	0.02	5.52	0.00	0.08	0.17
Awareness of self-regulation	−0.31	−0.30	0.03	−10.81	0.00	−0.37	−0.25
Constant	3.79	–	0.22	17.52	0.00	3.37	4.22

$F(8, 1,150) = 37.71$

$R^2 = 0.208$

Adj. $R^2 = 0.202$

necessary ($\beta = -0.08, p < 0.01$). On the other hand, the more the respondents perceived the impact on adolescents, the more they tended to feel the need for regulation ($\beta = 0.13, p < 0.001$). In terms of regulatory awareness, it was found that if the respondents agreed that self-regulation was not properly implemented at present ($\beta = -0.31, p < 0.001$), they also considered it necessary to regulate live video streaming (see Table 12).

In Model 2, there was no significant difference from the first model in explanatory power of other variables, including overall explanatory power, social demographic variables, usage experience, and self-regulatory perception. In terms of media influence-related variables, it was found that the greater the difference between the respondents' perception of the impact of live video streaming on adolescents and individuals, the more they regarded regulation as necessary ($\beta = 0.11, p < 0.001$), supporting H4 (see Table 13).

Small group analysis was conducted to examine the factors affecting the necessity of regulating live video streaming and the differences between users and non-users. Model 3 divided the user and non-user groups to examine the differences in significant variables in the need for regulation. When demographic variables were controlled, both groups generally showed similar trends to the analysis of all respondents. In both groups, the current self-regulatory perception variable was the most predictive (users $\beta = -0.311, p < 0.001$; non-users $\beta = -0.235, p < 0.001$). However, unlike the non-user group, the variables that evaluated the impact of live video streaming on individuals did not give statistically significant results on the necessity of regulation in the user group (see Table 14).

Table 13: Regression analysis of regulatory necessity: model 2.

Necessity of regulation	<i>B</i>	β	SE	<i>t</i>	<i>p</i>	95 % CI	
						LL	UL
Sex	0.32	0.18	0.05	6.86	0.00	0.23	0.41
Age	−0.03	−0.05	0.02	−1.79	0.07	−0.07	0.00
Education	0.01	0.01	0.03	0.51	0.61	−0.04	0.07
Income	−0.03	−0.03	0.03	−0.97	0.34	−0.10	0.03
Using experience	0.15	0.08	0.05	2.82	0.01	0.04	0.25
Adolescents-individual	0.11	0.16	0.02	5.96	0.00	0.07	0.14
Awareness of regulation	−0.32	−0.30	0.03	−11.22	0.00	−0.37	−0.26
Constant	4.01	–	0.16	24.75	0.00	3.69	4.33

$F(7, 1,152) = 42.70$
 $R^2 = 0.206$
Adj. $R^2 = 0.201$

Table 14: Regression analysis of regulatory necessity (users/non-users): model 3.

	Users		Non-users	
Sex	0.212	***	0.104	*
Age	−0.082	*	0.065	
Education	0.011		0.037	
Income	0.005		−0.106	*
Impact on individuals	−0.045		−0.182	***
Impact on adolescents	0.147	***	0.177	***
Awareness of regulation	−0.311	***	−0.235	***
<i>N</i>	825		335	
Adj. R^2	0.203		0.163	
<i>F</i>	30.95		10.26	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

In Model 4, the influence of the social demographic variable and the self-regulatory perception variable tended to be the same as in Model 3. The greater the difference in perception variables between users and non-users in terms of the impact that web live video streaming has on themselves and the impact that it has on young people, the greater the difference in perception between users and non-users, the greater the recognition of the need for restrictions. In terms of the perceived differential variables in the influence of live video streaming on themselves and on adolescents, the bigger the users' ($\beta = -0.130$, $p < 0.001$) and non-users' ($\beta = -0.260$,

Table 15: Regression analysis of regulatory necessity (users/non-users): model 4.

	Users		Non-users	
Sex	0.216	***	0.104	*
Age	−0.090	**	0.068	
Education	0.008		0.038	
Income	−0.001		−0.106	*
Adolescent-individual	0.130	***	0.260	***
Awareness of regulation	−0.324	***	−0.234	***
<i>N</i>	825		335	
Adj. <i>R</i> ²	0.200		0.165	
<i>F</i>	35.28		11.99	

p* < 0.05, *p* < 0.01, ****p* < 0.001.

p < 0.001) perception difference between the two aspects were, the more they supported a need for regulation. This variable was the variable with the greatest predictive power in the non-user group. The results suggest that the degree of perception bias significantly explains the need for regulation in both user and non-user groups. These results support H4 in that it shows that recognition of third-person effect can lead to consent to regulation at the behavioral level (see Table 15).

According to RQ2, the more people considered that live video streaming had a small impact on individuals and had a greater impact on adolescents, the more sympathetic they are to the need for regulation. The greater the degree of bias in perception was, which is the perception difference of influence between oneself and others, the greater people agreed the need for regulation. These results were the same even when the group was divided into users and non-users. In conclusion, it shows that the third-person effect on live video streaming is a real behavioral result of the need for regulation.

5 Conclusion and discussion

Is live video streaming an extension of broadcasting or a type of Internet service? In the draft of the Integrated Broadcasting Act, it was argued that OTT operators should be defined as “additional paid broadcasting operators prescribed by Presidential Decree” and put within the framework of broadcasting regulations. The problem is that the scope of additional paid broadcasters according to the “standard prescribed by Presidential Decree” is not accurate. Currently, live video streaming is already called “broadcasting,” but its legal status is not “broadcasting” subject to the Broadcasting Act. Therefore, live video streaming operators do not bear various legal regulations given

to broadcasters under the Broadcasting Act, such as public responsibility, entry regulations, restrictions on business qualifications, broadcast deliberation obligations, grade classification obligations, and broadcast preservation obligations.

Currently, live video streaming service providers are value-added telecommunications service providers under the Telecommunications Business Act. Compared to other telecommunications companies (key communication, specially designated communication), the entry barrier of live video streaming is very low because the legal obligations are low and it is a reporting system, not a registration system. Current regulations are based on self-regulation, such as each operator deleting harmful contents or sanctioning users. Although the Korea Communications Standards Commission can recommend sanctions to operators for content detected through user reporting or monitoring, it is not legally binding on its implementation.

Amid active discussions on the regulation of Internet personal broadcasting, this study investigated the perception of the regulation of live video streaming by means of proportional distribution, targeting live video streaming users and non-users. Studies have been conducted on the regulation of Internet personal broadcasting, but most research was based on data research or expert interviews (Lee 2016; Lee et al. 2016b; Park et al. 2017) and no nationwide survey has yet been conducted on the influence and regulation of live video streaming recognized by the general public. Therefore, this study has the value of targeting nationwide samples. A preliminary survey was conducted on 700 respondents to determine the percentage of users in the absence of an existing sample survey of live video streaming users. Later, in this survey, 825 users and 335 non-users from those aged 15 or older to those in their 50s were analyzed as final samples through proportional allocation.

According to the survey results, respondents recognized that the influence of live video streaming would be greater for adolescents than themselves. These results show that the third-person effect, which has been commonly mentioned in many previous studies, appear in recognition of the influence of personal broadcasting. Existing research on third-party effects showed that people saw others more vulnerable to media effects than themselves. In general, the third-person effect does not specifically define who the third person is, but it is said that the degree of the third-person effect differs depending on the physical and psychological heterogeneity that occurs between oneself and others. In conclusion, the greater the sense of social distance between oneself and others, the greater the likelihood of falling victim to media effects. Compared to the user group, the non-user group thought that live video streaming had less effect on them, evaluated the current self-regulation more negatively and agreed more with the overall need for regulation in the future, including detailed regulations. In this context, it can be interpreted that the non-user group has a negative view compared to live video streaming users.

Existing research on the third-person effect believes that biased perceptions can lead to the opinion that media should be regulated. In this study, the greater the degree of bias in perception, that is, the greater the difference between influence over oneself and over others, the stronger regulatory opinion appears. In particular, this trend was more pronounced in the non-user group. This result provides policy implications for future live video streaming regulations by confirming that there is a difference in perception of regulations between users and non-users in the regulatory discussion on Internet personal broadcasting. Those who do not actually use live video streaming can express more negative and strong regulatory opinions than necessary or appropriate, regardless of what live video streaming is like. Therefore, it suggests that policymakers need to investigate and check the actual status of live video streaming contents in regulation-related policy decisions.

The problem is that it is not realistically possible to check or store all the content transmitted in real time on countless channels. In the case of broadcasting, the contents of information are deliberated after broadcasting through the Korea Communications Standards Commission. Article 32 of the Broadcasting Act (Deliberation on Impartiality and Public Nature of Broadcast) states, “The Korea Communications Standards Commission shall deliberate on and pass a resolution as to whether the contents of a broadcast, a CATV relay broadcast and an electric sign board broadcast, or the contents of information similar to a broadcast and the information prescribed by Presidential Decree, from among the information circulated through telecommunication circuits aiming at opening to the public, maintain their impartiality and public nature, and as to whether they observe public responsibilities, after they are broadcasted or circulated. In such cases, the characteristics by medium and by channel shall be taken into consideration.” However, live video streaming cannot undergo post-deliberation as stipulated by the Broadcasting Act. Currently, live video streaming is viewed and shared by billions of individuals. In situations where it is necessary to monitor and check the problems of actual contents, a new method that might be useful is artificial intelligence-based automatic content filtering.

In the case of YouTube, it is said that monitoring work has been managed through content ID since 2007. Naver is applying its own pornography filtering artificial intelligence technology “Naver X-eye” to the image part to detect inappropriate images in real time and prevent search exposure (Chae 2017). Naver says it will expand the technology to video filtering in the future. Technology that automatically censors content based on artificial intelligence algorithms is gradually expanding to many operators due to the popularization of underlying technology. There are various debates and limitations that can arise when these technologies are actually applied, but considering that the perception of the influence of Internet personal broadcasting’s non-users can be stronger than it actually is, these technologies can be considered in the policy decision process.

Despite the practical implications of showing the public's perception of live video streaming based on nationwide samples, this study has limitations. The theoretical discussion of the third-person effect explicitly mentions the causes or factors that reinforce the effects of the third-person effect and discusses the point that cognitive-level effects lead to action. This study also showed cognitive bias when evaluating the influence of internet personal broadcasting, and showed that there was a difference between non-users and users in recognition of the need for regulation, but did not examine the impact of various dimensions on third-party effects. For example, self-efficacy may be a variable that explains the perception of the influence of live video streaming on oneself, but various aspects including this were not considered in this study. In addition, it is regrettable that more diverse discussions were lacking, limiting the measurement of behavior to only a need for regulation. Understanding the overall perception may have highlighted the negative side rather than the positive side of Internet personal broadcasting, such as creative and diverse content, so it is necessary to further study the direction of regulation along with careful interpretation. Nevertheless, this study presented timely results by dealing with the regulatory issue of Internet personal broadcasting, which has recently attracted attention. Future research should develop more realistic and desirable regulatory policies through research on actual live video streaming contents beyond recognition.

References

- AfreecaTV. 2019. AfreecaTV 2019 first quarter earnings release. Available at: http://corp.afreecatv.com/download/ir/earning_release/2019/AfreecaTV_1Q_19_earnings_Kor.pdf. [아프리카TV (2019. 04. 30.) AfreecaTV 2019년 1분기 실적발표].
- Chae, Ban-seok. 2017. DIA TV, “We will create a TV ecosystem for individual broadcasters”. Bloter. Available at: <http://www.bloter.net/archives/270406>. [채반석 (2017. 1. 11). 다이아TV, “1인 방송 위한 TV 생태계 만들겠다”. 블로터.].
- Chia, Stella C., Kerr-Hsin Lu & Douglas M. McLeod. 2004. Sex, lies, and video compact disc: A case study on third-person perception and motivations for media censorship. *Communication Research* 31(1). 109–130.
- Choi, Jin-wong. 2016. Problems and improvement plan of Internet personal broadcasting. Issues and Points, 1187. National Assembly Legislative Research Service. Available at: http://www.nars.go.kr/brdView.do?brd_Seq=18869&currPg=1&cmsCd=CM0018&category=c2&src=&srcTemp=&pageSize=10. [최진웅 (2016). 인터넷 개인방송의 문제점과 개선 방안 [전자매체론]. <이슈와 논점> 1187호. 국회입법조사처.].
- Cisco. 2017. Cisco visual networking index: Forecast and methodology, 2016–2021. Available at: <https://www.cisco.com/c/dam/en/us/solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.pdf>.

- Cohen, Jeremy, Diana Mutz, Vincent Price & Albert Gunther. 1988. Perceived impact of defamation: An experiment on third-person effects. *Public Opinion Quarterly* 52(2). 161–173.
- Davison, W. Phillips. 1983. The third-person effect in communication. *Public Opinion Quarterly* 47(1). 1–15.
- Dohle, Marco & Uli Bernhard. 2013. Presumed online media influence and support for censorship: Results from a survey among German parliamentarians. *International Journal of Public Opinion Research* 26(2). 256–268.
- DoItSurvey. 2017. [Survey/Public Opinion] Internet personal broadcasting: Have you ever encountered it? Available at: <https://doooit.tistory.com/383>. [두잇서베이 (2017. 11. 17.). [설문조사결과/여론조사결과] 인터넷 개인방송, 접한 적이 있나요?].
- Duck, Julie M., Michael A. Hogg & Deborah J. Terry. 1995. Me, us, and them: Political identification and the third-person effect in the 1993 Australian federal election. *European Journal of Social Psychology* 25(2). 195–215.
- Gunther, Albert. C. 1991. What we think others think: Cause and consequence in the third-person effect. *Communication Research* 18(3). 355–372.
- Gunther, Albert C. 1995. Overrating the X-rating: The third-person perception and support for censorship of pornography. *Journal of Communication* 45(1). 27–38.
- Hamilton, William A., Oliver Garretson & Andruud Kerne. 2014. Streaming on twitch: Fostering participatory communities of play within live mixed media. *Proceedings of the 32nd annual ACM conference on Human factors in computing systems*, 1315–1324. Toronto, ON, Canada: ACM.
- Henriksen, Lisa & June A. Flora. 1999. Third-person perception and children: Perceived impact of pro-and anti-smoking ads. *Communication Research* 26(6). 643–665.
- Hoffner, Cynthia, Martha Buchanan, Joel David Anderson, Lisa A. Hubbs, Stacy K. Kamigaki, Laura Kowalczyk, Angela Pastorek, Richard S. Plotkin & Kelsey J. Silberg. 1999. Support for censorship of television violence: The role of the third-person effect and news exposure. *Communication Research* 26(6). 726–742.
- Hu, Mu, Mingli Zhang & Yu Wang. 2017. Why do audiences choose to keep watching on live video streaming platforms? An explanation of dual identification framework. *Computers in Human Behavior* 75. 594–606.
- Hwang, Sung Gi. 2005. A study on the legal problems of current internet content regulation. *Journal of Cybercommunication Academic Society* 15. 5–55. [황성기 (2005). 현행 인터넷 내용심의제도의 법적 문제점에 관한 연구. <사이버 커뮤니케이션학회>].
- Hwang, Seung-heum. 2014. *Internet self-regulation and law*. Seoul: Communication Books. [황승흠 (2014). <인터넷 자율규제와 법>. 서울: 커뮤니케이션북스].
- Hwang, Seong-ki & Seung-hoon Choi. 2001. Concepts and mechanisms of self-regulation of Internet content. *Information Society and Media* (3). 222–252. [황성기·최승훈 (2001). 인터넷 콘텐츠 자율규제의 개념과 장치들. <정보사회와 미디어>].
- Jeong, Gaeun. 2019. Effect of third-person effect perception of online hate speech posting on attitude toward hate expression regulation. *Chungnam Journal of Social Science* 30(1). 271–286. [정가은 (2019). 온라인 혐오표현 게시글의 제 3 자 효과 지각이 혐오표현 규제에 대한 태도에 미치는 영향. <사회과학연구>].
- Ji, Song-u. 2009. A study on the self-regulation model of internet advertising. *Public Land Law Review* 43(3). 685–703. [지성우 (2009). 인터넷 광고의 자율규제모델에 관한 연구. <토지공법연구>].
- Joo, Chung-Min. 2005. The use of the Internet pornography and the third person effect. *Korean Journal of Broadcasting and Telecommunication Studies* 19(4). 565–603. [주정민 (2005). 인터넷 포르노그래피 이용과 지각적 편향. <한국방송학회>].

- Jung, Jaemin. 2007. Third-Person effect on the private loan TV commercial. *Korean Journal of Journalism & Communication Studies* 51(6). 111–134. [정재민 (2007). 대부업 광고에 대한 제3자 효과 연구. <한국언론학보>].
- Jung, Jaemin & Samsup Jo. 2013. Third-person effects of Internet stock recommendations. *Social Behavior and Personality: an International Journal* 41(9). 1435–1444.
- Kim, Yun-Myung. 2016. Legal issues of live video streaming in Multi-Channel Network environment. *Information and Communications Magazine* 33(4). 79–84. [김윤명 (2016). MCN 환경하에서 실시간 개인방송의 법적 쟁점. <정보와 통신>].
- Kim, Hyunyu. 2017. Elementary school teachers struggle with the influence of YouTubers and BJs. *Huffpost Korea*. <https://www.huffingtonpost.kr/news/articleView.html?idxno=54394>. [김현유 (2017. 7. 7.). 유튜버·BJ들의 영향력에 초등학교 교사들이 겪는 고충들. 허핑턴포스트코리아].
- Kim, Bumsu. 2018. Online Comment manipulation is a drop in the bucket," YouTube fake news runs rampant. *ChosunBiz*. Available at: http://biz.chosun.com/site/data/html_dir/2018/07/25/2018072502671.html. [김범수 (2018. 7. 26.). '댓글조작은 새발의 파' 폭주하는 유튜브 가짜뉴스. 조선비즈].
- Kim, Ike, Jwa Joong Kim & Eun Kyoung Han. 2011. The third-person perception of impulse buying in social commerce. *Advertising Research* 91. 313–347. [김일·김좌중·한은경 (2011). 소셜 커머스의 충동구매에 대한 제3자 효과 지각에 관한 연구, <광고연구>].
- Lee, Hyang-sun. 2016. *Study on the Improvement of the regulation System for similar broadcast content*. Korea Communications Standards Commission. [이향선 (2016). <유사 방송 콘텐츠 규제 개선방안 연구>. 방송통신심의위원회].
- Lee, Chang Ho, Ock Tae Kim & Sang Y. Bai. 2016a. The exploration of factors influencing the attitude of youths toward governmental Internet game regulation policies: Focusing on the third-person effect and the attribution theory. *Dongguk Journal of Social Science* 23(1). 107–130. [이창호·김옥태·배상률 (2016). 청소년들의 인터넷게임규제정책에 대한 태도에 영향을].
- Lee, Dong-hoo, Seol-hee Lee & Nam-hee Hong. 2016b. *Restructuring the livevideo streaming regulation system in the smart media era*. National Assembly Legislative Research Service. [이동후·이설희·홍남희 (2016). <스마트미디어시대 인터넷 개인방송 규제 체계 정비>. 국회입법조사처. 미치는 요인 탐색 : 제3자 효과와 귀인이론을 중심으로. <사회과학연구>].
- McLeod, Douglas. M., William P. Eveland, Jr. & Amy I. Nathanson. 1997. Support for censorship of violent and misogynic rap lyrics: An analysis of the third-person effect. *Communication Research* 24(2). 153–174.
- Ministry of Education. 2018. Press release of the state of K-12 career education survey. [Blog]. Available at: <https://if-blog.tistory.com/8538>. [교육부 (2018. 12. 14.). 2018 초중등 진로교육 현황조사 결과 발표].
- Nasmedia. 2019. 2019 Netizen profile research. Available at: <https://www.nasmedia.co.kr/NPR/2019%EB%85%84/>. [나스미디어 (2019). 2019 인터넷 이용자 조사].
- O'shaughnessy, Michael, Jane Stadler & Sarah Casey. 2016. *Media & society*. South Melbourne, VIC, Australia: Oxford Press.
- Park, Seo-yeon. 2019. Internet personal broadcasting, the most sanctioned in the last year, is a 'dilemma'. *Media Today*. Available at: <http://www.mediatoday.co.kr/?mod=news&act=articleView&idxno=146425>. [박서연 (2019. 1. 20.). 지난해 인터넷 개인방송 최다 심의, 체계 '딜레마'. 미디어오늘].
- Park, Ju-yeon., Seung-hye Son & Hae-won Kim. 2017. *Current status of the livevideo streaming industry and investigation of self-regulation*. Korea Communications Standards Commission. [박주연·손승혜·김해원 (2017). <인터넷 개인방송 산업 현황 및 자율규제조사>. 방송통신심의위원회].

- Rheingold, Howard. 1993. *The virtual community: Finding connection in a computerized world*. Boston, MA, USA: Addison-Wesley Longman Publishing Co., Inc.
- Rifkin, Jeremy. 2014. *The zero marginal cost society: The internet of things, the collaborative commons, and the eclipse of capitalism*. New York, NY, USA: St. Martin's Press.
- Rosenthal, Sonny, Benjamin Hill Detenber & Hernando Rojas. 2018. Efficacy beliefs in third-person effects. *Communication Research* 45(4). 554–576.
- Salwen, Michael B. 1998. Perceptions of media influence and support for censorship: The third-person effect in the 1996 presidential election. *Communication Research* 25(3). 259–285.
- Scharrer, Erica & Ron Leone. 2008. First-person shooters and the third-person effect. *Human Communication Research* 34(2). 210–233.
- Schmierbach, Mike, Michael P. Boyle & Douglas M. McLeod. 2008. Understanding person perceptions: Comparing four common statistical approaches to third-person research. *Mass Communication and Society* 11(4). 492–513.
- Schmierbach, Mike, Michael P. Boyle, Qian Xu & Douglas M. McLeod. 2011. Exploring third-person differences between gamers and nongamers. *Journal of Communication* 61(2). 307–327.
- Shah, Dhavan V., Ronald J. Faber & Seounmi Youn. 1999. Susceptibility and severity: Perceptual dimensions underlying the third-person effect. *Communication Research* 26(2). 240–267.
- Shim, Sungwoo. 2014. Internet game webcasting and copyright - focusing on AfreecaTV. *Yonsei Journal of Medical and Science Technology Law* 5(2). 1–51. [심성우 (2014). 인터넷 개인 게임방송과 저작권-아프리카 TV 사례를 중심으로. <연세 의료·과학기술과 법>].
- Statista. 2018. Youtube – statistics & facts. Available at: <https://www.statista.com/statistics/859829/logged-in-youtube-viewers-worldwide/>.
- Sunstein, Cass R. 2002. *Republic.com*. Princeton, NJ: Princeton University Press.
- Yang, Jung-ae & Se-wook Oh. 2018. YouTube video usage and exposure to false information. *Media Issues* 4(8). 1–17. [양정애·오세욱 (2018). 유튜브 동영상 이용과 허위정보 노출 경험. <미디어이슈>].
- YouTube. 2019. YouTube for press. Available at: <https://www.youtube.com/intl/ko/yt/about/press/>.
- Yu, Hong-Sik. 2010. Third-Person effect and support for censorship of internet replies. *Korean Journal of Broadcasting and Telecommunication Studies* 24(5). 238–278. [유홍식 (2010). 악성 댓글에 대한 제3자 효과 연구. <한국방송학보>].