

ORIGINAL SCIENTIFIC PAPER

A Study on the Relationship of the Motivation to Use Individual Internet Sports Broadcasting, Social Media Engagement, and Social Presence

Kyongmin Lee¹ and Ae-Rang Kim¹

¹Dankook University, Department of Sport Management, Cheonan, Korea

Abstract

Although social presence is, in concept, the individual subjective experience that users feel in the media-based, virtual communication environment, a discussion of the relationship between the social factors, the psychological factors, and the social presence of users of individual internet broadcasting is insufficient. Therefore, looking at users of sports broadcasting of AfreecaTV, which is an internet broadcasting platform, this study has empirically analysed the influence of media use motivation and social media engagement on the social presence of the user. For this study, a survey was conducted using a convenience sampling method with a sample of 300 users in Seoul, South Korea, who watched individual internet sports broadcasting through AfreecaTV. The main results obtained through multiple regression analysis are as follows. First, the motivation to pursue social relations, which is a subfactor of media use motivation, was found to have a significant, positive influence on functional engagement, while the motivation to pursue social relations and a broadcasting jockey's attractiveness were found to have a significant positive influence on emotional and communal engagement. Second, information acquisition and broadcasting a jockey's attractiveness (i.e., contents among the subfactors of media use motivation) were found to have a significant positive influence on social presence. Third, among the subfactors of users' engagement with individual internet sports broadcasting, only communal engagement was found to have a significant, positive influence on social presence.

Keywords: media use motivation, social media engagement, social presence, individual internet sports broadcasting

Introduction

Due to changes in the media environment as a result of advancements in digital technology, the number of people participating in personal broadcast production and viewing is gradually increasing. The main form of personal broadcasting in recent years is real-time, internet broadcasting. Unlike traditional media, the main feature of individual internet broadcasting is that interactive communication between a broadcasting jockey and users and between users is possible through real-time chat services during a broadcast

(D. Lee, & S. Lee, 2014). Because interpersonal communication that occurs in such individual internet broadcasting is media-based, users can experience social presence (Short, Williams, & Christie, 1976), which is the extent to which users feel as if they are meeting and talking to each other in a media-based virtual communication environment (Fulk, Steinfeld, Schmitz, & Power, 1987). With a high level of social presence leading to immersion in broadcasting channels (Hwang & Lim, 2015) and loyalty (Lim, Hwang, Kim, & Biocca, 2015), it is very important in terms of media effect



Correspondence:

A.R. Kim

Dankook University, Department of Sport Management, 119 Dandae-ro, Dongnam-gu, Cheonan-si, Chungnam, South Korea

E-mail: arkim@dankook.ac.kr

that users experience a high-level social presence in individual internet broadcasting.

In general, the technical attributes of communication media play an important role in forming social presence (Daft & Lengel, 1986; Biocca & Harms, 2002). For example, according to the literature review of Oh, Ballenson and Welch (2018) on the determinants of social presence, it was found that people who use media that offers functions, such as a high-level of interactivity, high definition, high sound quality, and a widescreen picture format, can experience a greater level of social presence than they otherwise would. It is also known that text-based communication media might have a lower level of social presence due to the lack of non-verbal cues and social cues compared to video-based communication media (Whiteside, Dikkers, & Swan, 2017).

In this context, the technical attributes that individual internet broadcasting provides to users are important factors that can have a positive influence on a user's social presence experience, which is because, with internet broadcasting, the real-time chat-service function enables interaction between the broadcasting jockey and users and between users; thus, the users can experience a high level of social presence, such as having face-to-face communication (D. Lee, & S. Lee, 2014). However, because social presence is conceptually an individual's subjective experience felt by users in the media-based virtual communication environment, it seems to be necessary to discuss how the social and psychological factors of individual internet broadcasting users might influence one's social presence experience in addition to the technical attributes (Hwang & Park, 2007; Oh et al., 2018).

The first internal factor that this study examined is one's motivation to use media, which can affect the social presence of an individual internet broadcasting user. According to the theory of use and gratification, which is widely used in studies of media use to identify the media use motivation by individuals, it is presupposed that the media user is active and that a particular media fulfils a user's needs by selecting and using a particular media (Lariscy, Tinkham, & Sweetser, 2011). Based on the theory of use and gratification, one can watch individual internet broadcasting because of other needs from existing media use and can feel satisfied when the needs are fulfilled. In this regard, the use motivation of individual internet sports broadcasting might influence one's social presence (Hwang & Park, 2007).

In addition to motives for media use, social media engagement can be considered to be another internal factor that can affect the social presence of users of individual internet broadcasting. Engagement generally entails a degree of involvement (Wang, 2006); a level of immersion (Rothbard, 2001); and passion, attachment, and commitment to an individual's object, such as company, brand, product, or media (Kang, 2014). In the present study, social media engagement refers to the degree of participation, attachment, and commitment with which individual users want to interact with content, a broadcasting jockey, and other users in individual internet sports broadcasting. Attaching and immersing oneself in a particular object or activity means that the user focuses attention somewhere (Witmer & Singer, 1998). The centralized attention of media users can double the feeling of face-to-face communication despite being a virtual space by immersing themselves in the virtual experience of a media's visual, auditory, and tactile sensations (Witmer & Singer, 1998).

In a study by Lim et al. (2015), which empirically verified the relationship between social media engagement and social presence of users, the causality between the two variables was confirmed. The study found that the higher the functional engagement of Social Networking Service (SNS) users, such as sharing opinions with other users regarding Olympic broadcasting through SNS and sharing opinions related to broadcasting videos, photos, and broadcasts through SNS, the more the experiences of social presence increased (Lim et al., 2015). This theoretical basis shows that users' engagement with individual internet broadcasting can have a positive effect on users' social presence experience.

In contrast, the particular use motivation of an individual internet broadcasting user might affect the engagement of the user to the broadcasting. Khan (2017) empirically analysed the impact of YouTube users' motivation to use YouTube engagement based on the theory of use and gratification. The motivation for pursuing pleasure, for pursuing social relations, and for providing information were found to be the most influential factors on a response of likes and dislikes, writing comments, and video uploads, respectively. The motivation for pursuing pleasure and the motivation for providing information were found to be the most influential factor on YouTube viewing and on reading comments, respectively (Khan, 2017). This result suggests that the particular use motivation of individual internet broadcasting might influence a user's engagement with individual internet broadcasting.

As discussed above, the discussion about social presence in the situation of frequent interpersonal interaction through personal broadcasting is very meaningful in terms of media effects. However, empirical studies on the factors that can influence social presence in the individual internet broadcasting that is a representative type of personal broadcasting are highly insufficient (Cho & Lim, 2019). In addition, even though the concept of social presence is a subjective experience that the user realistically feels the content embodied in the media (Hwang & Park, 2007; Oh et al., 2018), there is a dearth of discussion of the internal factors of users that influence the social presence. Therefore, this study has empirically analysed the influence of the media use motivation and social media engagement on a user's social presence on the users of sports broadcasting of AfreecaTV, one of the most popular real-time individual internet broadcasting platforms in South Korea.

Based on the theoretical discussion of the relationship between the use motivation of individual internet broadcasting, social media engagement, and social presence, the hypotheses for this study are as follows:

Hypothesis 1: The motivation to use individual internet sports broadcasting will affect a user's engagement with individual internet sports broadcasting.

Hypothesis 2: The motivation to use individual internet sports broadcasting will affect a user's social presence.

Hypothesis 3: User engagement for individual internet sports broadcasting will affect a user's social presence.

Methods

Participants

To analyse the internal factors influencing the social presence of individual internet sports broadcasting users, this study selected users who had experience watching in-

dividual internet sports broadcasting through AfreecaTV in Seoul, South Korea. Data were obtained using the convenience sampling method, and 300 questionnaires were distributed to participants in the study; 293 of them were used as the final analysis data; seven were unreliable-responsive or unresponsive.

Measures

Structured questionnaires were used to investigate the relationship between the use motivation of individual in-

ternet sports broadcasting, social engagement, and social presence. All of the questionnaires were measured on a five-point Likert scale. Based on the questions used in the preceding study (Kim, 2017; Kim, 2018; Lim & Kim, 2018; Hwang & Lim, 2015), the survey questionnaire on the media use motivation were extracted from a total of 31 items, 25 of which were used; six did not suit the purpose of the study. The exploratory factor analysis and the reliability of the media use motivation questionnaire is shown in Table 1.

The social media engagement questionnaire was used by

Table 1. Factor and Reliability Analysis of the Media Use Motivation Questionnaire (N=293)

Item	Loadings	α
Broadcasting jockey's attractiveness		0.864
Because broadcasting jockeys worked well together	.769	
Because broadcasting jockey has rich knowledge associated	.728	
Because broadcasting jockey has good ability to explain game situations	.700	
Because broadcasting jockey is sexually attractive	.679	
Because broadcasting jockey communicates well	.656	
Because broadcasting jockey has good pronunciation and voice	.635	
	Total	% of Variance
Eigenvalue	3.576	14.305
	Cumulative %	14.305
Item	Loadings	α
Pursuit of convenience		0.863
To know immediately what happened on the field	.782	
Because I can quickly see the important situation of the whole game without having to watch the game from start to finish.	.758	
Because I can directly hear the news posted by the viewers on the playing field	.737	
Because the information about the game or player is quick	.732	
Because many people can easily see various reactions through SNS	.682	
	Total	% of Variance
Eigenvalue	3.356	13.423
	Cumulative %	27.728
Item	Loadings	α
Pursuit of social relations		0.898
To find material and topics to talk to someone later	.837	
To watch a game with someone else	.821	
Because I can talk to other people watching the broadcast	.806	
To talk with friends on SNS	.736	
	Total	% of Variance
Eigenvalue	3.269	13.074
	Cumulative %	40.802
Item	Loadings	α
Pursuit of information acquisition		0.842
To share my thoughts about the game with others	.748	
Because it's efficient to get various points of view regarding the game situation	.736	
To get more information about situations that occurred in the game	.727	
To learn other people's opinion when controversy arises	.683	
Because I can get photos or video information regarding my favourite players	.632	
	Total	% of Variance
Eigenvalue	3.065	12.262
	Cumulative %	53.064

(continued on next page)

(continued from previous page)

Item		Loadings	α
Pursuit of fun			0.825
Because it's more fun to watch the game		.783	
Because watching the game becomes more interesting		.774	
Because I can enjoy watching the game more		.631	
	Total	% of Variance	Cumulative %
Eigenvalue	2.346	9.386	62.450

Item		Loadings	α
Pursuit of contents			0.818
Because of broadcasting jockey's sensory dialogue and fun		.850	
Because of various materials of sports game		.819	
	Total	% of Variance	Cumulative %
Eigenvalue	1.727	6.907	69.357

modifying a questionnaire developed by Lim et al. (2015) to meet the purpose of this study. The exploratory factor analysis and the reliability of the engagement questionnaire are shown in Table 2.

Table 2. Factor and Reliability Analysis of the Social Media Engagement Questionnaire

Item		Loadings	α
Functional engagement			.910
Videos or photos associated with the broadcasting of sports broadcasting jockey were uploaded on my SNS		.832	
Opinions about sports broadcasting jockey were left or spread on my friend's account, which is popular on SNS		.789	
When posting on SNS, related searches or (Twitter) hashtags (#) about sports broadcasting jockey were often used		.775	
Comments on other people's opinions regarding the sports broadcasting jockey's broadcasting were written or spread		.733	
	Total	% of Variance	Cumulative %
Eigenvalue	3.487	29.055	29.055

Item		Loadings	α
Emotional engagement			.937
When the quality of broadcasting (screen, subtitle composition, etc.) jockeyed by sports broadcasting jockey was good, encouragement or praise was sent		.805	
Sports broadcasting jockey's impressive comments were spread on SNS		.790	
Good feelings were expressed to sports broadcasting jockey		.754	
The feeling of agreement (or opposition) was expressed to the comments of the sports broadcasting jockey		.717	
	Total	% of Variance	Cumulative %
Eigenvalue	3.407	28.392	57.447

Item		Loadings	α
Communal engagement			.900
I shared opinions and sympathized with people watching the same broadcast		.804	
I tried to convey better information to the group with which I wanted to communicate		.749	
I shared the opinions on the sports broadcasting jockey's broadcasting on SNS		.680	
I communicated with same-minded people through the search term (e.g., Twitter hashtag) provided by the sports broadcasting jockey		.531	
	Total	% of Variance	Cumulative %
Eigenvalue	2.758	22.987	80.447

The social presence questionnaire was used by modifying and supplementing the questionnaire used in the study by Lim et al. (2015) to meet the purpose of this study. Social presence

questionnaires included three items as a single factor. The contents and reliability of the social presence questionnaire are shown in Table 3.

Table 3. Contents and Reliability Analysis of the Social Presence Questionnaire

Item	α
I felt I was communicating directly with other people while watching sports broadcasting jockey's broadcasting	.797
I felt I was watching the same game with my friends or acquaintances at the same time while watching sports broadcasting jockey's broadcasting	
I felt that countless people were watching together at the same time while watching sports broadcasting jockey's broadcasting	

Data analysis

Data collected in this study were analysed using SPSS 23.0. Reliability analysis was conducted to verify the reliability of the measurement items, and the validity of the measurement tool was verified through exploratory factor analysis. In addition, the study hypothesis was verified through multiple regression analysis. All statistical signif-

icance verification in this study was verified at the level of $\alpha=.05$.

Results

Table 4 shows the results of the verification of the relationship between the use motivation of individual internet sports broadcasting and social media engagement.

Table 4. Influence of Media Use Motivation on Social Media Engagement

Variable	Functional			Emotional			Communal		
	<i>B</i>	<i>SEB</i>	β	<i>B</i>	<i>SEB</i>	β	<i>B</i>	<i>SEB</i>	β
Pursuit of information	.152	.082	.131	.157	.089	.126	.150	.088	.122
Pursuit of convenience	-.105	.081	-.089	-.149	.087	-.116	-.087	.086	-.070
Social relations	.202	.068	.207**	.220	.073	.208**	.213	.072	.206**
Broadcasting jockey's attractiveness	.140	.092	.107	.199	.099	.141*	.208	.098	.151*
Pursuit of contents	.027	.057	.030	.088	.061	.090	.073	.060	.077
Pursuit of fun	.131	.079	.120	.088	.085	.075	.035	.084	.030
R^2		.176			.187			.174	
<i>F</i>		10.185***			10.976***			10.027***	

Legend: * $p < .05$. ** $p < .01$. *** $p < .001$

The motivation for pursuing social relations was found to have a significant positive influence on the functional engagement, while the motivation for pursuing social relations and the broadcasting jockey's attractiveness were found to have a significant positive influence on emotional and communal engagement. The media use motivation was found to explain 17.6% of the total variants of the functional engagement, 18.7% of the total variants of the emotional

engagement, and 17.4% of the total variants of communal engagement.

Table 5 shows the results of the verification of the relationship between the use motivation of sports broadcasting and social presence. The pursuit of content, information acquisition, and the broadcasting jockey's attractiveness were found to have a significant positive influence on social presence. The motivation for watching sports broadcasting was found to ex-

Table 5. Influence of Media Use Motivation on Social Presence

Variable	Social presence		
	<i>B</i>	<i>SEB</i>	β
Pursuit of information	.161	.078	.141*
Pursuit of benefits	.098	.077	.084
Social relations	-.050	.064	-.052
Broadcasting jockey's attractiveness	.304	.087	.236**
Pursuit of contents	.230	.053	.257***
Pursuit of fun	-.050	.074	-.046
R^2		.252	
<i>F</i>		16.043***	

plain 25.2% of the total variants of social presence.

Table 6 shows the results of verifying the relationship between a user's engagement with individual internet sports broadcasting and social presence. Only communal engage-

ment was found to have a significant positive influence on social presence. The level of a user's engagement with individual internet sports broadcasting was found to explain 24.8% of the total variants of social presence.

Table 6. Influence of Social Media Engagement on Social Presence

Variable	Presence		
	<i>B</i>	<i>SE B</i>	β
Functional	-.059	.082	-.060
Emotional	.123	.091	.135
Communal	.398	.092	.426***
R ²		.248	
F		34.900***	

Discussion

First, it was found that the higher the motivation to pursue social relations, the higher the levels of functional, emotional, and communal engagements, while a higher level of broadcasting jockey attractiveness contributed to higher levels of emotional and communal engagements of the users. Forming a high level of emotional and communal engagement not only helps users maintain a high level of psychological or emotional immersion in individual internet sports broadcasting but also contributes to creating a series of communities that can enhance interactions among users, ultimately helping users prefer and continuously use individual internet sports broadcasting over other forms of broadcasting (Lim et al., 2015). Thus, it seems that service providers of individual internet sports broadcasting need a strategy to discover and foster the attractive elements of the broadcasting jockeys, which the users of the broadcasting desire, along with efforts to enhance social interaction between users and between users and broadcasting jockeys to improve the level of emotional and communal engagement among users in broadcasting.

Second, a user's social presence was found to increase when watching sports broadcasting because of the broadcasting jockey's attractiveness, the pursuit of information, and the pursuit of content. The content of personal sports broadcasting on the internet depends on the situation of the game, not on a scripted outcome and can share the feeling of the situation with the broadcasting jockey and other users through real-time chatting, so users can feel as if they are sitting in the bleachers in the stadium, even if they are watching a sports game in a virtual space over the internet.

In this study, pursuers of information can be classified as active participants in real-time internet broadcasting in that they ask other viewers what they want through comments and develop their own ideas about the ebb and flow of the game, triggering other viewers' information-pursuing behaviour (Khan, 2017). An active behaviour-related study of SNS users (Chen, Lu, Cha, & Gupta, 2014) found that active actions, such as posting comments or disseminating videos or photos on SNS, have a positive connection to the affective and continuance commitment of SNS users. In a media-mediated environment, a person immersed in a particular object or activity might experience a high sense of social presence that embraces the communicated presence as a real presence by concentrating their focus on the virtual experience (Witmer & Singer, 1998).

In this context, information-pursuing motivations give individual viewers of individual internet sports broadcasting a high emotional engagement to active information-pursuing behaviour through social interaction with other viewers, which could make them feel like they are getting or exchanging information in a face-to-face environment. Thus, to enhance users' experience in social presence, service providers

of individual internet sports broadcasting need to meet users' motivation to pursue information by creating a broadcasting environment in which users can ask and share much of the information they seek and can voice their views on the situation of the game.

In contrast, the positive causality of the broadcasting jockey attractiveness of the individual internet sports broadcast and social presence identified in this study can be explained by the concept of pseudo-social interaction. A pseudo-social interaction occurs when the interaction between the media user and the characters (e.g., actors, celebrities, announcers) (Horton & Wohl, 1956) creates a strong affinity with the user and the characters (Rubin, Perse, & Powell, 1985). The formation of intimacy is enhanced by continuous interaction with characters appearing in the media (Perse & Rubin, 1989), the similarity between media users and characters (Turner, 1993), and characters' physical attractiveness (Hoffner, 1996). These pseudo-social interactions formed through intimacy between media users and characters cause users to feel emotional engagement with the characters in the media, which can affect the social presence of the media environment to the extent that individuals feel they are in the presence of others while interacting with them (Lombard & Ditton, 1997).

In this regard, due to a broadcasting jockey's physical attractiveness and professionalism in this study, people who watch personal sports broadcasts on the internet experience a pseudo-social interaction with the moderator, which is seen as having a positive impact on a user's social real-life experience. Thus, to improve users' sense of social presence, service providers of individual internet sports broadcasting need to make efforts to enhance the broadcasting jockey's attractiveness.

Finally, only communal engagement among social media factors has a positive impact on social presence. Communal engagement is classified as the highest level of engagement among the factors involved in social media, and users with a high level of communal engagement in social media have a great emotional engagement with the involvement and participation of social media and form a series of communities while actively interacting with other users of social media (Lim et al., 2015). These communities have the characteristics of online brand communities in that they are based on social relationships between people with interests and affection for social media (Lim et al., 2015).

Online brand communities are communities of people with an online-based passion for a particular brand (Dessart, Veloutsou, & Morgan-Thomas, 2015). Those identified by a particular brand have a continuing interest in the brand and try to maintain and develop their engagement to the online communal experience through active social interaction, such as sharing information about the brand and personal experience (Algesheimer, Dholakia, & Herrmann, 2005). In an online

communal formed by a particular brand, the engaged people tend to show “enhanced satisfaction, empowerment, connection, emotional bonding, trust and communion” (Brodie, Ilic, Juric, & Hollebeek, 2013, p. 105). Thus, people with high levels of engagement with online brand communities form trust and emotional bonds through active social interaction with members of the communal, giving participants a sense of solidarity and belonging to the communal. The formation of emotional bonds and communal feelings among members in an online communal will have a positive effect on social presence, which is communication via media but feels like meeting each other in person.

In this light, users with a high level of communal engagement in individual internet sports broadcasting will form a series of communities and more actively participate in broadcasting content, with broadcasting jockeys, and interactions with other users. Thus, to improve users’ sense of social presence, service providers of individual internet sports broadcasting need to improve users’ level of communal engagement in broadcasting.

The results of this study suggested basic data on media use

Acknowledgements

There are no acknowledgements.

Conflict of Interest

The author declare that there are no conflicts of interest.

Received: 11 March 2020 | **Accepted:** 03 May 2020 | **Published:** 01 October 2020

References

- Algesheimer, R., Dholakia, U.M., & Herrmann. (2005). The social influence of brand community: Evidence from European car clubs. *Journal of Marketing*, 69(3), 19-34.
- Biocca, F., & Harms, C. (2002). Defining and measuring social presence: Contribution to the networked minds theory measure. In F. R. Gouveia & F. Biocca (Eds.), *Proceedings of the 5th International Workshop on Presence* (7-36). Porto, Portugal: University Fernando Pessoa
- Brodie, R.J., Ilic, A., Juric, B., & Hollebeek, L. (2013). Consumer engagement in a virtual brand community: An exploratory analysis. *Journal of Business Research*, 66(1), 105-114.
- Chen, A., Lu, Y., Chau, P.Y.K., & Gupta, S. (2014). Classifying, measuring, and predicting users’ overall active behavior on social networking site. *Journal of Management Information Systems*, 31(3), 213-253.
- Cho, Y., & Lim, S. (2019). Psychological effects of interactivity for internet live broadcasting viewers: Moderating role of user motivations on parasocial interaction, social presence, and flow. *Journal of Broadcasting and Telecommunications Research*, 82-117.
- Daft, R.L., & Lengel, R.H. (1986). Organizational information requirements, media richness and structural design. *Management Science*, 32(5), 554-571.
- Dessart, L., Veloutsou, C., & Morgan-Thomas, A. (2015). Consumer engagement in online brand communities: A social media perspective. *Journal of Product & Brand Management*, 24(1), 28-42.
- Fulk, J., Steinfield, C.W., Schmitz, J.A., & Power, J.G. (1987). A social information processing model of media use in organizations. *Communication Research*, 14, 542-543.
- Horton, D., & Wohl, R.R. (1956). Mass communication and para-social interaction: Observations on intimacy at a distance. *Psychiatry*, 19, 215-229.
- Hwang, Y., & Lim, S.L. (2015). The impact of engagement motives for social TV on social presence and sports channel commitment. *Telematics and Informatics*, 32, 755-765.
- Hwang, H.S., & Park, S. (2007). Rethinking of TV viewing satisfaction: Relationships among TV viewing motivation, parasocial interaction, and presence. *Korean Journal of Broadcasting and Telecommunication Studies*, 21(5), 339-379.
- Kang, M. (2014). Understanding public engagement: Conceptualizing and measuring its influence on supportive behavioral intentions. *Journal of Public Relations Research*, 26(5), 399-416.
- Khan, M.L. (2017). Social media engagement: What motivates user participation and consumption on YouTube? *Computers in Human Behavior*, 66, 236-247.
- Kim, J.M. (2017). Analysis of the influence that the motive to view internet live broadcast has on the degree of satisfaction in viewing and the intention to continue viewing. *The Korean Society of Design Culture*, 23(2), 141-152.
- Kim, J.M. (2018). Influence of internet one-person game broadcasting BJ property on the viewers’ satisfaction: Flow experience as mediator. *Journal of Digital Convergence*, 16(7), 357-367.
- Lariscy, R.W., Tinkham, S.F., & Sweetser, K.D. (2011). Kids these days: Examining differences in political uses and gratifications, internet political participation, political information efficacy, and cynicism on the basis of age. *American Behavioral Scientist*, 55(6), 749-764.
- Lee, D., & Lee, S. (2014). Media experience in live streaming video service: Comparative study on parasocial interaction and social presence among live sports streaming video service users. *Korean Journal of Journalism & Communication Studies*, 58(1), 148-177.
- Lim, J.Y., & Kim, J.M. (2018). Analysis of audience attitude according to AfreecaTV strategy simulation game BJ attributes: Focusing on viewer satisfaction, loyalty, viewing purpose, viewing attitude. *Journal of Communication Design*, 62, 106-117.
- Lim, S.L., Hwang, Y., Kim, S., & Biocca, F.A. (2015). How social media engagement leads to sports channel loyalty: Mediating roles of social presence and channel commitment. *Computers in Human Behavior*, 46, 158-167.
- Lombard, M., & Ditton, T. (1997). At the heart of it all: The concept of presence. *Journal of Computer-Mediated Communication*, 3(2). Retrieved March 11, 2020, from <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1083-6101.1997.tb00072.x>
- Oh, C.S., Ballenson, J.N., & Welch, G.F. (2018). A systematic review of social presence: Definition, antecedents, and implications. *Frontiers in Robotics and AI*, 5(114), 1-35.
- Perse, E.M., & Rubin, R.B. (1989). Attribution in social and parasocial relationships. *Communication Research*, 16, 59-77.
- Rothbard, N.P. (2001). Enriching or depleting? The dynamics of engagement in work and family roles. *Administrative Science Quarterly*, 46, 655-684.
- Rubin, A.M., Perse, E.M., & Powell, R.A. (1985). Loneliness, parasocial interaction, and local television news viewing. *Human Communication Research*, 12, 155-180.
- Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. London: John Wiley & Sons.
- Turner, J.R. (1993). Interpersonal and psychological predictors of parasocial interaction with different television performers. *Communication Quarterly*, 41, 443-453.
- Wang, A. (2006). When synergy in marketing communication online enhance audience response: The effects of varying advertising and product publicity message. *Journal of Advertising Research*, 46(2), 160-170.
- Whiteside, A.L., Dikkers, A.G., & Swan, K. (Eds.). (2017). *Social presence in online learning: Multiple perspectives on practice and research* (1st ed.). Sterling, Virginia: Stylus Publishing, LLC.
- Witmer, B.G., & Singer, M.J. (1998). Measuring presence in virtual environments: A presence questionnaire. *Presence: Teleoperators and Virtual Environments*, 7(3), 225-240.