

## A Study on Correlation among Viewers by Medium based on KBS PIE-TV Index

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### Abstract

In order to respond to the ever-changing media environments in the era of smart and mobile technology, KBS has introduced and partially applied PIE-TV and PIE-nonTV modes that monitor the average number of viewers among the national population group by means of the sample household extraction method which is a traditional way of rating investigation. This study analyzes the correlation between the number of viewers of premiere, re-air broadcasting, and MPP channel programs and the number of OTT-based VOD viewers in reference to the data extracted from PIE-TV survey results. KBS conducted a survey for 3 months between June and August 2017 to measure the PIE-TV Index, based on which the above-mentioned correlation was analyzed with programs classified to entertainment, drama, and cultural programs. For data analysis, SPSS (Ver. 18.0 for Window, SPSS Inc, Chicago, IL, USA) was utilized. It was assumed that when  $p < 0.05$  in the confidence interval of 95%, statistically significance would be secured. Among the 30 subjects in the simple correlation analysis, the parameter was determined by the Person correlation coefficient and the non-parameter by the Spearman correlation coefficient. Analysis results are as below: ① As the number of viewers of premier entertainment, drama, and cultural programs was larger, the number of VOD viewers was larger accordingly. ② As for entertainment and drama programs, as the number of re-air broadcasting viewers was larger, the number of VOD viewers decreased accordingly. ③ As for entertainment and drama programs, as the number of MPP viewers was larger, the number of VOD viewers decreased accordingly. It is expected that this statistical data can be utilized for strategic planning of MPP channel lineups including terrestrial TV broadcasting, cable TV, etc.

**Keywords:** PIE-TV Index, TV Ratings, OTT, VOD, Media Trend

### 1. Introduction

OTT (Over The Top) is a TV broadcast service available via the Internet. This service provides video contents not via electric waves or cable but the universal public Internet. In the past, 'TOP' meant a 'set top box' connected to a TV set, but now it is understood as 'Over The Top-X' that provides all types of video services comprehensively through Internet-based media such as TV, PC, smart-phone, etc. [1]. OTT service started in the mid and late 2000s when the high-speed Internet technology was developed and made it possible to provide video services without interruption. Google released 'Google Video' in 2005, Apple released 'Apple TV' in 2007, and a video rental company Netflix initiated its streaming service in 2007 [2].

In Korea as well, terrestrial TV broadcasting systems released the joint service named 'Pooq,' and CJ

E&M launched 'Tving' service. Consumers' video consumption trends may be summarized as follows: first, 'reduction of scheduled linear TV viewing'; and second, 'TV viewing increase & screen shifting' [3]. These two phenomena indicate that viewers would no longer watch TV programs according to the lineup schedule set by broadcasting systems. Rather, people may choose binge viewing, sectional viewing, reviewing, etc. as they want. These trends also indicate that the demands for video watching through mobile devices have increased. The young age bracket from 20 to 49 seems to lead these trends [4][5].

KBS provides OTT service through 'Pooq' which is a joint service of terrestrial TV broadcasting systems and its own platform called 'my K.' In addition to existing viewer rating surveys, it has developed and applied PIE-TV (Program Index for Evaluation) which is an integrated index of contents use rates. Unlike the existing method that indicated the real-time viewer rating in percentage, PIE-TV estimates the number of viewers. This provides the comprehensive data of the numbers of premiere, re-air broadcasting, MPP, and VOD viewers. The objective of this study is to analyze the correlation between media based on the number of PIE-TV viewers. Particularly, the focus is on the correlation between the number of premiere, re-air broadcasting, and MPP viewers and the number of VOD viewers. The viewer data between June and August 2017 is used in the experiment with KBS 1 and 2 channel broadcasts classified to entertainment, drama, and documentary programs.

## **2. Over-the-top Media Services**

### **2.1 Prospect of Media Consumption Environments**

According to 2016 statistics of the Korea Communications Commission, the distribution rate of smart-phones is 83%, the rate of those aware of the need of smart-phones was 55.5%, and the average time of using a smart-phone per day was 1 hour and 22 minutes. The rate of simultaneous use of multiple media including TV is 48.7%, which indicates that the importance of smart-phones is ever increasing. During the last week, the OTT use rate was 27.1%, and among service media, the use rate of smart-phones and tablets was 97.3% with that of desktop computers and laptop computers as low as 16.5% and 7.9% respectively. This also indicates that the consumption of OTT videos through mobile devices such as smart-phone is increasing rapidly [6][7]. Accordingly, broadcasting systems seek to develop diversified strategies to make profits from contents in the OTT market as profits from the advertising market continue decreasing.

### **2.2 Global OTT Environment Analysis**

#### **① Current Condition of U.S. OTT Market**

Netflix is the world largest OTT company that provides commercial video service. The number of its members around the globe has already exceeded 0.1 billion. Its success factors include low prices, supply of original contents, and the recommendation algorithm First, as for its low pricing system, more than films and TV programs are available at the price of \$7.99 to \$11.99 on average while existing commercial broadcast systems such as cable TV offer such services at \$50. Second, Netflix supplies original contents strategically. Since 'Lilyhammer,' which was its first comedy drama released in February 2012, Netflix has provided a variety of contents including 'House of Cards,' a political drama released in 2013 and nominated for Emmy Award. Other works such as 'Orange is the New Black' and 'Stranger things' increased the number of members drastically and even affected stock prize rising. 'Okja,' produced in 2017 by the Korean director Jun-ho Bong, had positive effects on both domestic and foreign markets. Particularly in Korea, as 'Okja' was released in the 4th week of June, the number of members was doubled from 98,000 to 203,000 in the 1st week of July. Third, Netflix applies its self-developed contents recommendation algorithm called 'Cinematch.' By means of this algorithm, Netflix provides contents curation and recommendation services as it analyzes data of users' website searching results, ratings on watched videos, location information, device information, preferred programs on weekdays or on weekends, and big data of social media. [8][9].

**Table 1. Current Condition of OTT Service Use in the U.S. (multiple answers)**

	<i>Netflix</i>	<i>YouTube</i>	<i>Amazon Prime</i>	<i>Hulu</i>
<b>Market Share</b>	74%	54%	33%	23%

As the number of online video TV channels in the U.S. market is increasing, competition is getting fiercer not only among themselves but also among OTT service providers that develop contents. Recently, Disney announced the termination of its contents supply to Netflix in 2019 as it would establish its own service network, which will make the competition even fiercer. However, expenses for contents licensing and production are so tremendous that it is challenging to secure profitability in reality.

**Table 2. Competition among OTT Service Providers in the U.S. That Produce Original Contents**

<i>Company</i>	<i>Status</i>
<b>Netflix</b>	8 billion dollars estimated to be spent for original contents production in 2018
<b>Amazon</b>	4 billion dollars and 4.5 billion dollars estimated to be spent in 2017 and 2018 respectively
<b>YouTube</b>	YouTube is planning to supply 50 original contents exclusively through YouTube Red in 2017
<b>Apple</b>	Its original TV show entitled 'Planet of Apps' was announced in June 2017. 1 billion dollars estimated to be spent for original contents production in 2018
<b>Facebook</b>	Facebook is discussing with Hollywood on production of TV programs; 3 million dollars estimated to be invested into each episode Revenues will be distributed among producers with commercials inserted.
<b>Snapchat</b>	A 0.1 billion dollar contract has been concluded with Warner Bros.
<b>HBO</b>	2 billion dollars will be invested into production of original contents.

According to Nielsen Media Report, the OTT market is changing rapidly and significantly. The U.S. broadcasting circle predicts that the OTT impact will induce a 'code cutting' of 10 million individuals newly joining in pay-broadcast services by 2021. Furthermore, an outstanding number of elderly viewers are transferring to OTT services: the increase rate of OTT viewers aged 50 to 64 is 45% and that of viewers aged 65 or older is 36% while the hours of viewing TV programs in the first quarter among U.S. citizens aged 50 to 64 decreased for the first time [10][11].

### ① Current Condition of Korean OTT Market

The OTT market in Korea is dominated by Pooq which is a union of terrestrial TV broadcasting systems, Tving of CJ E&M, Naver TV Cast, and IPTV service providers. Recently, Netflix that is a global service provider initiated its business in Korea. According to one survey of KISDI, the OTT market was worth of 488.4 billion won in 2016, which indicates 53.7% increase compared to the previous year. 35% of people in Korea use OTT services. Most of them use smart devices, and 16.5% and 7.9% use PCs and laptop computers respectively. The use rate of YouTube is 88.6%, Facebook 30.9%, and Naver TV Cast 24.2% respectively. As for the use rate of commercial service providers, that of IPTV and Pooq is about 2%. Only 4.7% of the subscribers use services at a flat fee or by paying additional charges. Unlike that in the U.S., the commercial broadcast market in Korea provides paid services such as cable TV and IPTV at low prices. It seems that for this reason, the code cutting phenomenon due to the low price policy like that of Netflix in the U.S. is insignificant [12].

**Table 3. Current Conditions of Major OTT Services in Korea (Source: KISDI)**

<i>Company</i>	<i>Services</i>	<i>Market Share (%)</i>
Tving	Cable TV live broadcasting & VOD (including films)	19.5
Pooq	Terrestrial TV broadcasting, total TV program channel, cable TV live broadcasting, and VOD (including films)	18.3
Olleh TV Mobile	Terrestrial TV broadcasting, total TV program channel, cable TV live broadcasting, and VOD (including films)	12.6
BTV Mobile	Total TV program channel, cable TV live broadcasting & VOD (including films)	12.5
UPlus Video Portal	Terrestrial TV broadcasting (partial), total TV program channel, cable TV live broadcasting & VOD (including films)	12.5
Naver TV Cast	Broadcast and online contents	30.1
Youtube	UCC or existing broadcast contents	34.6
Afreeca TV		6.1
Daum TV Pot		16

### ② The response of Pooq as a union of terrestrial TV broadcasting systems to the OTT market

The domestic market of terrestrial TV commercials in 2016 was worth of 1 trillion and 660 billion, which indicates 14% decrease (about 269 billion) compared to the previous year. Its turnover is decreasing rapidly (2016 survey on advertising costs in broadcast communication, KOBACO). This phenomenon seems to result from changes in media consumption trends. In addition, the transition of the advertisement market to online and smart media service providers is expected to continue. It is sought to maintain the existing level of ad revenues by increasing prices of CPS provided to cable TV and IPTV services and by increasing unit prices of VODs [13].

As for the revenue structure of KBS, for example, TV license fees amount to 630 billion won, ad revenues 420 billion won, and revenues from contents 290 billion won among the total amount of 1.6 trillion won. Revenues from contents account for 18%, and this percentage is expected to increase in the future [14]. KBS responds to the OTT market with its Pooq service. The share ratio of Pooq is 20% for KBS, 40% for MBC, and 40% for SBS. The number of paid subscribers in 2016 was 520,000, and the sales mounted to 29.4 billion. As its 4K high definition broadcast service is introduced in the future, it is expected that Pooq can play an important role as a platform for VOD distribution and sales.

### ③ KBS program viewer index - PIE-TV and PIE-nonTV

As contents consumption through smart media increased, KBS made known the results of its FGI (Focus Group Interview) conducted among female viewers in the 30s to 40s. This age group was specially chosen because the consumption of contents targeting female viewers in the 30s to 40s had increased. Additionally, it had been pointed out that the existing counting method focusing on the live broadcasting popularity rating did not reflect young viewers properly. The PIE-TV (Program Index for Evaluation) method is based on the monthly average of the number of premiere viewers, number of re-air broadcasting viewers, number of MPP (MPP channels with viewer groups) viewers, and number of VOD viewers. PIE-nonTV is based on the total number of viewers of news, community programs, SNS, YouTube, and portals [15].

## 3. Experiment research method

### 3.1 Research Design

This study refers to KBS PIE-TV index analyzed for 3 months from July 2017. Programs were classified

to entertainment, drama, and cultural programs depending on the impact on VODs. The average number of viewers of the four types - premiere, re-air broadcasting, MPP, and VODs - was analyzed for each category of entertainment, drama, and cultural programs as below:

- 1) Premiere: correlation between the average number of '2049 viewers (hereunder, '2049' means the generation of young ones aged 20 to 49)' per episode and the average number of viewers of each VOD
- 2) Premiere: correlation between the average number of viewers per episode and the average number of viewers of each VOD
- 3) Re-air broadcasting: correlation between the average number of viewers per episode and the average number of viewers of each VOD
- 4) MPP: correlation between the average number of viewers per episode and the average number of viewers of each VOD

### 3.2 Research Subject and Data Collection

As for premieres, the average number of '2049' viewers and the average number of viewers were counted. As for re-air broadcastings, the number of viewers was counted. As for MPP, the numbers of viewers of 6 KBS channels and cable TV channels were counted. As for the average number of VOD viewers, the data of digital cable TV and IPTV reviewing service users was referred to. The number of viewers in the population was 47,940, and the number of program samples was shown in Table 4.

**Table 4. PIE TV Data Set (June 2007 - August 2017)**  
(Source: KBS Report)

<i>Classification</i>	<i>Channels</i>	<i>Data set</i>
Entertainment	Premiere (2049's) Broadcasting	42
	Premiere Broadcasting	42
	Re-air Broadcasting	42
	MPP Channel Broadcasting	42
Drama	Premiere (2049's) Broadcasting	27
	Premiere Broadcasting	27
	Re-air Broadcasting	18
	MPP Channel Broadcasting	23
Cultural Program	Premiere (2049's) Broadcasting	50
	Premiere Broadcasting	50
	Re-air Broadcasting	25
	MPP Channel Broadcasting	26

### 3.3 Research Data Analysis

For data analysis, SPSS (Ver. 18.0 For Window, SPSS Inc., Chicago, IL, USA) was utilized. It was assumed that when  $p < 0.05$  in the confidence interval of 95%, statistical significance would be secured. Among the 30 subjects in the simple correlation analysis, the parameter was determined by the Person correlation coefficient and the non-parameter by the Spearman correlation coefficient.

#### ① Entertainment

In the analysis of the correlation between 2049 premieres in the area of entertainment and the number of VOD viewers, it turned out that there was a significant positive (+) correlation ( $0.7 \geq r \geq 0.3$ ), which was statistically significant as well ( $r = 0.526$ ,  $p < 0.001$ ).

**Table 5. Analysis of the correlation between the number of 2049 viewers of premieres in the area of entertainment program and the number of VOD viewers (N = 42)**

<i>Variable</i>	<i>Entertainment Premiere (2049's)</i>	<i>Entertainment VOD</i>
Entertainment Premiere (2049's)	1	
Entertainment VOD	0.526* (<0.001)	1

(\*:  $p < 0.05$ )

In the analysis of the correlation between premieres in the area of entertainment and the number of VOD viewers, it turned out that there was a significant positive (+) correlation ( $0.7 \geq r \geq 0.3$ ), which was statistically significant as well ( $r = 0.503$ ,  $p < 0.001$ ).

**Table 6. Analysis of the correlation between the number of entertainment program premiere viewers and the number of VOD viewers (N = 42)**

<i>Variable</i>	<i>Entertainment Premiere</i>	<i>Entertainment VOD</i>
Entertainment Premiere	1	
Entertainment VOD	0.503* (0.001)	1

(\*:  $p < 0.05$ )

In the analysis of the correlation between re-air entertainment broadcastings and the number of VOD viewers, it turned out that there was a significant positive (+) correlation ( $0.7 \geq r \geq 0.3$ ), which was statistically insignificant ( $r = 0.336$ ,  $p < 0.093$ ).

**Table 7. Analysis of the correlation between the number of entertainment program re-air viewers and the number of VOD viewers (N = 42)**

<i>Variable</i>	<i>Entertainment re-air</i>	<i>Entertainment VOD</i>
Entertainment re-air	1	
Entertainment VOD	0.336 (0.093)	1

(\*:  $p < 0.05$ )

In the analysis of the correlation between MPP and the number of VOD viewers, it turned out that there was an insignificant negative (-) correlation ( $0.1 \geq r \geq -0.1$ ), which was statistically insignificant ( $r = -0.119$ ,  $p < 0.481$ ).

**Table 8. Analysis of the correlation between the number of entertainment program MPP channel viewers and the number of VOD viewers (N = 42)**

<i>Variable</i>	<i>Entertainment MPP</i>	<i>Entertainment VOD</i>
Entertainment MPP	1	
Entertainment VOD	-0.119 (0.481)	1

(\*:  $p < 0.05$ )**② Drama**

In the analysis of the correlation between 2049 premieres in the area of drama and the number of VOD viewers, it turned out that there was a significant positive (+) correlation ( $0.7 \geq r \geq 0.3$ ), which was statistically significant as well ( $r = 0.416$ ,  $p < 0.031$ ).

**Table 9. Analysis of the correlation between the number of 2049 Generations premiere viewers in the area of drama and the number of VOD viewers (N = 27)**

<i>Variable</i>	<i>Drama premiere (2049's)</i>	<i>Drama VOD</i>
Drama premiere (2049's)	1	
Drama VOD	0.416* (0.031)	1

(\*:  $p < 0.05$ )

In the analysis of the correlation between premieres in the area of drama and the number of VOD viewers, it turned out that there was a significant positive (+) correlation ( $0.7 \geq r \geq 0.3$ ), which was statistically significant as well ( $r = 0.473$ ,  $p < 0.013$ ).

**Table 10. Analysis of the correlation between the number of premiere viewers in the area of drama and the number of VOD viewers (N = 27)**

<i>Variable</i>	<i>Drama Premiere</i>	<i>Drama VOD</i>
Drama Premiere	1	
Drama VOD	0.473* (0.013)	1

(\*:  $p < 0.05$ )

In the analysis of the correlation between re-air drama broadcastings and the number of VOD viewers, it turned out that there was no significant correlation ( $0.1 \geq r \geq -0.1$ ), and it was not statistically significant either ( $r = 0.094$ ,  $p < 0.711$ ).

**Table 11. Analysis of the correlation between the number of re-air viewers in the area of drama and the number of VOD viewers (N = 18)**

<i>Variable</i>	<i>Drama Re-air</i>	<i>Drama VOD</i>
Drama Re-air	1	
Drama VOD	0.473* (0.013)	1

(\*:  $p < 0.05$ )

In the analysis of the correlation between drama distribution and the number of VOD viewers, it turned out that there was a highly significant negative (-) correlation ( $-0.3 \geq r \geq -0.7$ ), which was statistically significant as well ( $r = -0.513$ ,  $p < 0.012$ ).

**Table 12. Analysis of the correlation between the number of MPP viewers in the area of drama and the number of VOD viewers (N = 23)**

<i>Variable</i>	<i>Drama MPP</i>	<i>Drama VOD</i>
Drama MPP	1	
Drama VOD	-0.513* (0.012)	1

(\*:  $p < 0.05$ )

### ③ Cultural Program

In the analysis of the correlation between 2049 premieres in the area of cultural programs and the number of VOD viewers, it turned out that there was a significant positive (+) correlation ( $0.7 \geq r \geq 0.3$ ), which was statistically significant as well ( $r = 0.672$ ,  $p < 0.001$ ).

**Table 13. Analysis of the correlation between the number of 2049 Generations premiere viewers in the area of cultural program and the number of VOD viewers (N = 50)**

<i>Variable</i>	<i>Cultural Premiere (2049's)</i>	<i>Cultural VOD</i>
Cultural Premiere (2049's)	1	
Cultural VOD	0.672* ( $< 0.001$ )	1

(\*:  $p < 0.05$ )

In the analysis of the correlation between premieres in the area of cultural programs and the number of VOD viewers, it turned out that there was a significant positive (+) correlation ( $0.7 \geq r \geq 0.3$ ), which was statistically significant as well ( $r = 0.641$ ,  $p < 0.001$ ).

**Table 14. Analysis of the correlation between the number of premiere viewers in the area of cultural program and the number of VOD viewers (N = 50)**

<i>Variable</i>	<i>Cultural Premiere</i>	<i>Cultural VOD</i>
Cultural Premiere	1	
Cultural VOD	0.641* ( $< 0.001$ )	1

(\*:  $p < 0.05$ )

In the analysis of the correlation between re-air cultural program broadcastings and the number of VOD



viewers, it turned out that there was a significant positive (+) correlation ( $0.7 \geq r \geq 0.3$ ), which was statistically insignificant ( $r=0.379$ ,  $p<0.062$ ).

**Table 15. Analysis of the correlation between the number of re-air viewers in the area of cultural program and the number of VOD viewers (N = 25)**

<i>Variable</i>	<i>Cultural Re-air</i>	<i>Cultural VOD</i>
Cultural Re-air	1	
Cultural VOD	0.379 (0.062)	1

(\*:  $p<0.05$ )

In the analysis of the correlation between MPP broadcastings and the number of VOD viewers, it turned out that there was an insignificant positive (+) correlation ( $0.3 \geq r \geq 0.1$ ), which was statistically insignificant ( $r=0.280$ ,  $p<0.167$ ).

**Table 16. Analysis of the correlation between the number of MPP viewers in the area of cultural program and the number of VOD viewers (N = 26)**

<i>Variable</i>	<i>Cultural MPP</i>	<i>Cultural VOD</i>
Cultural MPP	1	
Cultural VOD	0.280 (0.167)	1

(\*:  $p<0.05$ )

### 3.4 Results and Discussions

The findings of this study indicate that the larger number of '2049' viewers of premieres in all of the entertainment, drama, cultural programs, the larger number of VOD viewers. In other words, the larger number of premiere viewers in general, the larger number of VOD viewers. As for entertainment and drama programs, as the number of re-air broadcasting viewers was larger, the number of VOD viewers decreased accordingly. As for entertainment and drama areas, the larger number of MPP viewers, the smaller number of VOD viewers. This indicates that the young generation fond of entertainment and drama programs use various other platforms than that for VODs.

## 4. Conclusion

As viewer watching patterns were varied, OTT emerged as a new medium for profit-making. Accordingly, it is necessary to reconsider program lineup strategies of contents suppliers. As a result of analyzing contents consumption patterns among viewers aged 20 to 49 who would enjoy watching OTT programs, it turned out that regardless of the genres such as entertainment, drama, and cultural programs, programs securing a large number of premiere viewers secured a large number of VOD viewers as well. In addition, it turned out that as the number of viewers using re-air broadcasting or MPP channels was larger, the number of VOD viewers was small. This indicates that the concentrated lineup of programs in MPP channels caused a competitive relation with the VOD market. It is expected that these findings can be utilized in establishing strategies for program lineup planning among media groups. KBS conducted a survey on the number of viewers by means

of its PIE-TV surveying table, which is a new evaluation index instead of the existing popularity rating (%) method, producing quite significant research results.

## References

- [1] <https://ko.wikipedia.org/wiki/OTT>.
- [2] Seoh Kee-man, 'Understanding and Prospect of OTT Service', Broadcasting and Media, Vol. 16, No. 1, pp. 91-95, 2011.
- [3] Ericsson Consumer Lab, TV and Media Report, pp. 2-3, 2016.
- [4] C. M. Park, 'A Study on the Social TV Motivation and Interaction', PhD Thesis, pp. 10-13, 2015.
- [5] Joshi Sujata, Sarkar Sohag, Dewan Tanu, Dharmani Chintan<sup>1</sup>, Purohit Shubham and Gandhi Sumit, 'Impact of Over the Top (OTT) Services on Telecom Service Providers', Indian Journal of Science and Technology, Vol. 8 No. S4, pp. 145-160, 2015.
- [6] Korea Communications Commission, 'Usage Pattern of Research Broadcast Media', pp. 4-6, 2016.
- [7] European Parliament's Committee, 'Over-the-Top (OTTs) players: Market dynamics and policy challenges', , pp. 34-37, 2015.
- [8] Korean Broadcasting Engineers & Technicians Association, Broadcasting and Technology, Vol. 259, pp. 2-6, 2017.
- [9] Chris Roberts and Vince Muscarella, 'Defining Over-The-Top (OTT) Digital Distribution', The Entertainment Merchants Association, pp. 3-4, 2015.
- [10] Nielsen Media Report, 2017.
- [11] A publication series of the European Audiovisual observatory IRIS Plus, 'VOD, platforms and OTT : which promotion obligations for European Works', pp. 15-16, 2016.
- [12] Lee Sun-hee, 'Analysis of characteristics of Online Video Service (OTT) Users', Kisdistat Report, Vol. 17-07, pp. 1-10, 2017.
- [13] DMC Report, 'A Study on Use Behavior of Social Media and Social Media Advertising', pp. 6-9, 2016.
- [14] [www.kbs.co.kr](http://www.kbs.co.kr).
- [15] KBS Internal Report, Trend Media Insight, Vol. 4, p. 2, 2017.