

## **The Developing of Sports Commentator Attribute Scale for Adaptation to ICT and New Media Platform Era**

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### **Abstract**

*The purpose of this research is to organize panels centered on professional workers and experts in the sports media industry, identify structures and items of sports media commentators' attributes that conform to the present era through the collective agreement process, and evaluate the derived measures according to the scale development procedure. We would like to shed new light on the nature of commentators due to the rapid development of broadcasting technology and the emergence of new media platforms, the emergence and expansion of smart media receptors and the changing environment of modern sports broadcasting. For this purpose, a panel of experts from academia and industry related to sports management and sports media was organized and the attributes of commentators were analyzed using the Delphi method. Technology development in the sports market has created a new sports consumption environment. In these consumer environments, various environmental factors influence the consumer's consumption culture of sports consumers. For example, professional information, as well as interpretations of sports culture, history and society are becoming their share for sports commentators, and viewers are demanding more diverse characteristics from sports commentators. In this respect, the study of sports commentator attributes can be a deep understanding of the rapidly changing culture of sports consumption.*

**Keywords:** *Sports Commentator, Delphi, ICT, Scale, Professional Baseball,*

### **1. Introduction**

The sports broadcasting commentator improves the quality of broadcasting through the media inmates' understanding of sports, description of the progress of the game, analysis of the game, and interpretation. Objective information provision and field sense delivery play an important role in maintaining long-term relationships with consumers of sports media. The role of these sports commentators can directly affect the decision-making process of sports media consumption by potential consumers as well as sports consumers (Kim Jong-hoon, Lee Jung-hak, 2011)[1].

Professional baseball sports broadcasting has grown to be a competitive media in the media market for a considerable period of time, and various TV programs based on this have emerged. In particular, professional baseball broadcasting stations surged with the introduction of sports channels such as "SBS Sports," "MBC Sports Plus" and "KBS N Sports." In addition, interest in professional baseball broadcasting and popularization of the Internet and smartphones have caused a lot of changes in the channels of watching professional baseball, causing fierce competition. For example, portals such as Naver and Daum, N screens such as T-bing and pooq, and Internet broadcasting platforms such as Youtube and African TV are rapidly penetrating the professional baseball media market. With the advent of sports TV channels and the emergence of one-man broadcasting and new media platforms, the role of commentators has become a very important part of the composition of sports media content (Kim Jong-moo, 2018)[2].

In this way, it is more successful to explore the dimensions and structure of sports broadcasting commentators that reflect the internal and external environment of modern media at a time when sports broadcasting technology is likely to develop rapidly in the wake of the 4th Industrial Revolution, represented by hyper-connectivity and ambient integration, and ICT, amid the competitive structure of existing sports channels. With the advent of a new media environment in the professional sports market, the media environment is changing rapidly and diversely. The role of sports commentators in this process of change is a very important part of the development and evolution of media contents, and prior research has been conducted on the properties of sports commentators. However, it seems that there is a limit to applying it to the rapidly changing internal and external environment of sports media. Therefore, the purpose of this research is to organize panels centered on professional workers and experts in the sports media industry, identify structures and items of sports media commentators' attributes that conform to the present era through the collective agreement process, and evaluate the derived measures according to the scale development procedure.

## **2. Research Assignment**

We would like to shed new light on the nature of commentators due to the rapid development of broadcasting technology and the emergence of new media platforms, the emergence and expansion of smart media receptors and the changing environment of modern sports broadcasting. For this purpose, a panel of experts from academia and industry related to sports management and sports media was organized and the attributes of commentators were analyzed using the Delphi method. The basic assumption of the Delphi technique is to use a group of experts because "the two's judgment is more accurate than one's." Assuming that these group estimates are likely to include a range of correct answers, the statistical method is used to find accurate estimates (Kang Yong-ju, 2008)[3]. A group of 31 experts was formed and three rounds were held to identify the attributes of the commentators through the process of agreement on the attributes of the commentators.

## **3. Methodology**

### **3.1 Commentator Attribute Extraction Details**

A total of three surveys were conducted from June 17, 2019 to September 30, 2019 on a panel of experts selected by applying Delphi Technique to extract the attributes of sports media commentators, and the structure and measurement items of the attributes were derived.

### 3.2 Panelist Configuration

The selection of a panel of experts is critical to implementing Delphi techniques, as the selected experts are subject to the survey and have a decisive impact on the results of the study (Lee Ji-hee, 2017)[4]. In response, the panel was selected for the focus group interview by Jeong Mu-gwan, Kim Gil-dong, Kim Seung-soo and Moon Hyo-sung (2017)[5], Hwang Jung-joo, Yang Jin-yeon and Ahn Hyun-young (2018)[6]. Referring to the criteria for selecting Delphi panels, the first was to listen to the opinions of various professional workers related to sports media platforms, and the second was to collect opinions from academic circles, focusing on teachers majoring in sports media, and thirdly, to maintain objectivity in the selection of experts. Thus, 31 experts from academia and sports media were selected as panels. The panel received approval and asked for participation by researchers using SNS and schools through prior telephone contact.

### 3.3 Delphi Round

The Delphi round is a method of asking a panel through a series of surveys, called each sequential survey round. After collecting various opinions from experts by conducting the first open expert survey, the second and third closed survey was conducted to refine the agreement of the expert group and to derive the measurement items of the sports media commentator property.

### 3.4 Processing of data

Using SPSSWIN Ver. 24.0, to investigate the general characteristics of the panel group and the importance of the questionnaire, the content validity was determined based on the number of panels, using the analysis of convergence and convergence, and the content validity presented by Lawshe (1975)[7]. In addition, exploratory factor analysis was conducted to verify professionalism, reliability, attractiveness, and convergence feasibility of technology & smart, which are sub-factors of commentator attributes. After that, a positive factor analysis was conducted to verify the concentrated feasibility, and the reliability of the validated questions was verified through Cronbach's  $\alpha$ .

## 4. Research Results

### 4.1 Sports commentator attribute Delphi analysis results

The degree of consensus was analyzed through the content validity ratio (CVR) based on Lawshe (1975)'s theory to verify the content validity of the first, second and third commentators' attributes. The formula for the CVR is as shown in (1) of the following.  $n_e$  is an important number of cases in which the minimum CVR for each number of respondents is .42 for 25 respondents, .33 for 30 respondents, and .31 for 35 respondents. As there were 28 respondents to the Delphi survey, the CVR criterion was determined to be .42 or higher.

$$CVR = \frac{n_e - \frac{N}{2}}{\frac{N}{2}}$$

**Figure 1. CVR Formula**

The degree of consensus was analyzed through the content validity ratio (CVR) based on Lawshe (1975)'s theory to verify the content validity of the commentator's attributes. The number of third-order respondents was 28, the same as the second-order.  $n_e$  is an important number of cases in which the minimum CVR for each number of respondents is .42 for 25 respondents, .33 for 30 respondents, and .31 for 35 respondents. As

there were 28 respondents to the Delphi survey, the CVR criterion was determined to be .42 or higher, which is 25 respondents.

**Table 1. Sports commentator attributes and factors**

Attribute	Question
professionalism	Expertise in accurate baseball rules and rules
	Expertise in game management
	Expertise in data analysis
	Expertise based on the latest data
	Explanation based on accurate situation determination
	Age-wide commentary
	Insight into the baseball industry (infrastructure, business, trends)
	Explanation ability incorporating theory based on experience
Trusty	The ability to communicate language (words, spelling, comment relevance)
	Confident explanation based on professional knowledge rather than favorable one
	Active communication with viewers or professional baseball fans
	Comment on objective grounds
	Impartiality without biased commentary
	The Right Power of Predicting the Season Rankings, Player Growth, etc.
	Friendly style
	Humble attitude
Attractiveness	Effort to make eye contact with viewers.
	Easy and comfortable explanation
	Voice and tone
	Clean clothes and hairstyles
	Sense of fun and humor
	Build unique characters and style of commentary
	Application and Understanding of Saver Metrics
	Application of Understanding and Describing Statistics and Techniques
Technology & Smart	Communicate various data materials easily to viewers
	Describe the behavior of the graphical data
	Understanding the Change of mechanism
	Efforts to integrate traditional commentary with the changing media environment
	Effort to numerically express the logical basis of an explanation
	Efforts to adapt to the innovative changes of broadcasting stations

The theory of physical education (CVR=714) is a characteristic of professionalism. The question "(CVR=714)" is not feasible based on CVR .420. The following reliability attributes use standard language (CVR=143), and The question "(CVR=714)" was found to be less feasible based on the CVR .420, and in terms of its attractiveness, "appealing appearance" (CVR=357), and "Use various vocabulary (CVR=143), 'specific or appropriate level of gesture (CVR=.571), and "Acting in various areas (such as entertainment programs other than baseball, broadcasting and lectures) (CVR=.643), and various (volunteer activities, SNS, etc.) communication activities (CVR=.714) to enhance the reputation of commentators. The question "714" is not feasible based on CVR .420. Finally, in terms of technology development and the increase in smart

media acceptor, 'knowledge of new equipment and supplies (CVR=.0)' and 'strengthening real-time communication skills with media acceptor (CVR=.071)', "Enhancing Communication Capabilities Using Various Channels (TV, Mobile, Radio)" and "Using SNS (Communication Chapter, Information Sharing, Fans' Attributes, Viewers' Trend Analysis" (CVR=.500), 'reflecting opinions of media inmates (referring to viewers' questions by looking at Internet bulletin boards, CVR=.071)" is not feasible based on CVR .420.

The panel consisted of a group of experts on the attributes of sports commentators, using Delphi technique, the convergence and agreement level through the third round, seven questions of expertise, seven questions of reliability, eight questions of attractiveness, and eight questions of attributes according to the development of technology and the increase of smart media receptors were analyzed into a total of 30 questions of four attributes. The contents are as follows.

**Table 2. Results of exploratory factor analysis of sports commentator attributes**

Factor	1	2	3	4	h <sup>2</sup>
professionalism 1	.187	<b>.850</b>	.163	.143	.804
professionalism 2	.250	<b>.781</b>	.164	.250	.762
professionalism 4	.295	<b>.677</b>	-.002	.179	.577
professionalism 5	.289	<b>.749</b>	.152	.190	.703
Trusty 1	.350	.248	.129	<b>.578</b>	.534
Trusty 3	.304	.333	.101	<b>.627</b>	.606
Trusty 4	.399	.169	.171	<b>.684</b>	.685
Attractiveness 1	.274	.009	<b>.621</b>	.369	.597
Attractiveness 2	.114	.001	<b>.683</b>	.447	.679
Attractiveness 3	.319	.232	<b>.776</b>	.101	.768
Attractiveness 4	.293	.290	<b>.785</b>	.058	.789
Attractiveness 5	.420	.076	<b>.577</b>	.108	.528
Technology & Smart 1	<b>.661</b>	.141	.266	.230	.581
Technology & Smart 3	<b>.627</b>	.456	.305	.177	.726
Technology & Smart 4	<b>.673</b>	.237	.180	.234	.596
Technology & Smart 5	<b>.669</b>	.285	.171	.236	.614
Technology & Smart 6	<b>.709</b>	.328	.189	.191	.682
Technology & Smart 8	<b>.701</b>	.267	.269	.267	.706
eigenvalue	6.314	3.640	3.499	3.152	
Dispersion (%)	25.255	14.562	13.994	12.610	
Accumulation (%)	25.255	39.817	53.811	66.421	

#### 4.2 Feasibility and reliability analysis of sports commentators' attributes and structures

The validity and reliability of the commentator attributes and structure developed in this study were analyzed and the final questions were extracted. The validity was assessed by verifying the single dimensionality of each dimension using multiple items. In other words, exploratory factor analysis was conducted to verify the expertise, reliability, attractiveness, and convergence feasibility of technology & smart, which are sub-factors of commentator attributes. After that, a positive factor analysis was conducted to verify the concentrated feasibility, and the reliability of the validated questions was verified through Cronbach's  $\alpha$ .

#### 4.2.1 Exploratory Factors Analysis

An exploratory factor analysis was performed to verify convergence feasibility. The exploratory factor analysis was performed by Varimax among the principal components analysis methods, and only the questions with factor loading .5 or higher were selected for each factor. The exploratory factor analysis of commentator attributes showed four factors: professionalism, five questions of reliability, five questions of attractiveness and four factors of technology & smart 11. The cumulative variance ratio, which indicates conceptual validity, was 66.421%. Details are as shown in Table 2.

**Table 3. Results of confirmatory factor analysis of sports commentator attributes**

Factor	standardizing factor	Measurement error	t	Concept reliability	AVE
professionalism 1	.846	.159	-		
professionalism 2	.861	.166	18.307	.911	.722
professionalism 4	.661	.408	12.821		
professionalism 5	.789	.236	16.293		
Trusty 1	.647	.424	-		
Trusty 3	.708	.430	10.895	.866	.564
Trusty 4	.760	.397	11.534		
Attractiveness 1	.683	.402	-		
Attractiveness 2	.662	.502	10.759		
Attractiveness 3	.841	.189	13.248	.889	.619
Attractiveness 4	.827	.197	13.076		
Attractiveness 5	.655	.386	10.654		
Technology & Smart 1	.714	.401	-		
Technology & Smart 3	.820	.230	14.547		
Technology & Smart 4	.733	.338	12.986	.961	.689
Technology & Smart 5	.741	.313	13.116		
Technology & Smart 6	.787	.275	13.948		
Technology & Smart 8	.830	.226	14.723		

$\chi^2=671.259$   $df=269$ ,  $p=.000$ ,  $\chi^2/df=2.295$ ,  $TLI=.929$ ,  $CFI=.936$ ,  $RMSEA=.063$

#### 4.2.2 Confirmatory Factor Analysis

To verify the convergent validity and discriminant validity of the commentator's attributes, a positive factor analysis was conducted to achieve the same results as Table 3. Practical analysis used maximum likelihood: ML assuming multivariate normality. In order to identify the optimal condition of compositional concept and variable population, the conformity was assessed and the results were obtained as shown in Table 3. The conformity was verified by the TLI (at least criterion .9), CFI (at least criterion .9), and Kim Kye-soo (2007)[8] and RMSEA (below criterion 3), presented by Netemeyer, Boles, McKee and McMurrian (1997)[9]. As a result,  $TLI=.929$ ,  $CFI=.936$ ,  $\chi^2/df=2.295$ ,  $RMSEA=.063$  would satisfy the suitability relatively. We also compared standard loadings with AVE values and concept reliability to verify focused validity. As a result, all factors met the criteria for AVE (above 5.5), Concept Reliability (above 7.7), and Standard Value (above 5.5) suggested by Kim Gye-soo (2010), indicating that the concentration was

satisfied.

#### 4.2.3 Reliability

Internal consistency was tested using the Cronbach's  $\alpha$  test to analyze the reliability of the scales used in this study. Nunnally and Bernstein (1994)[10] said that a Cronbach's value of .70 greater than .70, sufficient reliability. The Cronbach's  $\alpha$  test in this study shows that the reliability coefficient is all More than 7 can be determined that each factor has internal consistency. The results of the specific reliability test are shown in Table 4.

**Table 4. Results of reliability analysis of sports commentator attributes**

Factor	Cronbach's $\alpha$
professionalism	.864
Trusty	.844
Attractiveness	.848
Technology & Smart	.947

## 5. Discussion and Conclusions

Technology development in the sports market has created a new sports consumption environment. In these consumer environments, various environmental factors influence the consumer's consumption culture of sports consumers. For example, professional information, as well as interpretations of sports culture, history and society are becoming their share for sports commentators, and viewers are demanding more diverse characteristics from sports commentators (Choi Myung-il, Kim Jae-beom, 2007)[11]. In this respect, the study of sports commentator attributes can be a deep understanding of the rapidly changing culture of sports consumption.

The meaning of the development of the sports commentator attribute scale is that the variables and questions presented by the existing prior studies have limitations in applying them to the changing sports consumption environment. Specifically, there is no content on technology development and smart media consumption. This study expanded the scope of the study, including these factors of changing the sports environment. The role of sports commentators can be interpreted in various ways depending on the culture and social environment. Sports commentators in the North American sports market tend to focus more on sports culture and history if they focus on providing and interpreting technical and professional information. In this respect, sports commentator attributes require multi-dimensional observation and measurement. Developing new scales requires various processes and procedures. Theoretical evidence, scientific procedures and realistic interpretations give important messages in the process.

The nature of sports commentators has changed and evolved over and over again due to changes in the sports market and the evolution of consumers. It can be said that the development of new scales for sports commentator attributes in this study provided the rationale for multidimensional measurements. In particular, the technology development and smart media presented in this study proved to be meaningful variables and questions for measuring sports commentators' attributes. The composition of measurement tools can have a direct effect on external validity. In general, the use of measurement tools is centered on the variables presented in the relevant prior studies based on the theoretical basis, and this theoretical foundation is created

only when various prior studies are conducted. In this respect, the development of scales for the attributes of sports commentators suggested the possibility of producing academic diversity values.

The sports industry market is rapidly changing due to changes in the market environment. In particular, the evolution of sports consumers and changes in the form of consumption culture give sports researchers a big homework. Therefore, it is judged that the basis of strategic approaches that can lead to innovation in sports consumption culture and the environment begins with this academic establishment. It is hard to predict how the sports industry market will unfold, but the viewing culture in the sports industry is likely to bring about a big change in the market through technology development. Therefore, it is judged that various academic observations and interpretations can successfully respond to such changes.

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