Analysis of Social Network Service User Responses and Success Factors for TV Dance Programs

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This research analyzes Social Network Service(SNS) user responses to the TV dance program "Dancing 9" and discusses its success factors. To this end, comment data registered on YouTube Dancing 9 videos were collected and analyzed for word frequency and topic modeling. Topical modeling resulted in six topics: Discovery of Star Dancer, Competition Structure, Street Dancer, Sympathy for Dance, Gatekeeping, and Music Effects. Based on these topics, a discussion of Dancing 9's success factors included: the discovery and production of star dancers, the competition structure of the Red Wings versus Blue Eye teams, convergence and harmony between different dance genres, dance skills with both popularity and artistry, gatekeeping elements that create dramatic tension, and the harmony of music and dance that meet the standards of the public. Based on these success factors, later-produced TV dance programs should identify public tastes and work harder to spread the dance.

Key words: Dance, TV Dance Programs, Dancing 9, SNS, Success Factors

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Introduction

Popularization of dance has been a constant topic in the dance industry, and has continued to focus on audience development, including diverse repertoires, original stages, and choreography of rare materials. A dance survival program aired on a cable channel affected the dance and performing arts circles a lot. The TV dance program 'Dancing 9' is it. After the 'Dancing 9' was broadcast, the public, who had been immersed in various genres of dance performances, moved away from the TV screen and moved to the concert hall, selling out the tickets for gala show performances quickly and adding encore performances(Shin, September 19, 2014). The phenomenon had been unprecedented in the dance industry before.

It may be premature to judge by the result of the ticket selling for the show, but it is undeniable that the broadcasting media has served to raise interest in modern dance to the extent. It quickly overthrows what the dance industry has been trying to popularize for many years(Kim, H. R., 2014; Park, 2018). As the dance community also has empathized with the popularization of dance and has made it an important task, it is necessary to pay attention to the dance programs in the media that have caused this sensation. It is necessary to look at the factors of how the mass media has achieved and succeeded in the daily life of dance and popularization, which have been the limitations of the dance industry, and to discuss the social and cultural phenomena that occur in the aftermath.

Dance Survival Program 'Dancing 9' was produced in season 3 from 2013 to 2015, recording a maximum 3.7% audience rating depending on the region(Kang, July 29, 2013), and has made a positive change in the dance industry since then. The public's interest in dance has risen sharply, so the dancers on the program has participated in various areas like idols, such as music videos and advertising models after completing 'Dancing 9'. It made public's interest in dance increased(Tae & Park, 2014). For example, the tickets for their performances were sold out. In addition, it proved that TV dance programs play a big role in making dance a popular topic, with performances featuring their star images being planned in the dance industry.

As 'Dancing 9' gained huge popularity, a follow-up TV program about dancing was produced with high expectations. Examples include 'Hit the Stage', 'Ballet Teaching Center Swan Club', and 'Somebody'. These programs were designed with different themes in the common link of dance, but they were not as sensational as 'Dancing 9'. Therefore, it is necessary to re-examine 'Dancing 9' and analyze the success factors of this program by paying attention to the public's response to the program.

After the 'Dancing 9' broadcast, studies related to 'Dancing 9' were conducted quantitatively and qualitatively to recognize the importance of this program and to reveal the academic value of the program. In particular, Lee(2014) was conducted to explore the success factors and development

directions of 'Dancing 9', but the factors were analyzed by literature reviews and video images. So it can have a limitation that subjective judgments by researchers can be involved. In addition, Bae's(2013), the first scholarly subject of 'Dancing 9', discussed the light and shade of 'Dancing 9' from the perspective of popularizing dance. In addition, there have been studies on fandom phenomena in 'Dancing 9'(Kim, J. H., 2014) and studies on the exploration of cultural development effects through 'Dancing 9'(Shin & Kim, 2016). Quantitative studies conducted to supplement the limitations of literature review studies and qualitative research have focused on the perception of dance, class satisfaction, dance interest, and association among performance-watching practitioners(Kim & Han, 2015; Hong, 2013).

Combining the prior studies that have been carried out so far, it has been shown that in-depth consideration has been made mainly on a single topic. This study, investigates the responses of SNS users who watched 'Dancing 9' and analyze the success factors of this program by using the big data analysis method topic modeling technique, which can be judged more broadly and objectively.

Therefore, the purpose of this study is to analyze the responses of viewers and to discuss the success factors of 'Dancing 9' through the derived topics by modeling comments on YouTube's 'Dancing 9' posts, which can actively search for videos without time and space constraints.

Method

Analysis Target

The analysis targets were comments from a video clips on YouTube about 'Dancing 9'. Data was collected using Netminer. The collection period is from July 20, 2013, when 'Dancing 9' season 1 was aired, to June 30, 2020, when the research was launched, and the search term was set as 'Dancing 9'. A total of 5,680 comments were collected by collecting up to 100 comments in order of relevance among the top 100 posts with high views among the searched data.

Data Cleaning

The collected data was refined to minimize errors and made into a suitable form for analysis. Data refining operated by Netminer which is used in a big data analysis and visualization program. Only Korean nouns and adjectives were extracted to remove special characters, numbers, and alphabets. In the Korean language, one syllable words such as 'choom' were converted to 'dance' because they could be excluded from analysis. The main word 'Dancing 9' has been transformed into 'Dancing 9'. It also excluded words that are frequently used, such as 'today', 'at this time' but are not related

to the purpose of the study. Like 'Blue Eye', words that are used as a single noun are treated to be extracted as they are.

Analysis method

The organized data were used Netminer to perform word frequency analysis and topic modeling. Topic modeling was analyzed using the Latent Dirichlet Allocation: LDA technique devised by Blei, Ng, & Jordan (2003). In topical modeling, the number of topics has an important effect on the results. In this study, a meeting of three or more Ph.D.s in dance studies, including researchers, was held to determine the number of topics, taking into account the interpretability of researchers and the suitability of topics. The determined topic was named by reference to the original text of the word based on the top 10 words that constitute each topic(Choi & Lee, 2020).

Results and discussion

Term frequency analysis

The frequency of the words was analyzed to check the words that SNS users mostly mentioned about 'Dancing 9'. The result of calculating the top 20 words most frequently mentioned in comments on YouTube's 'Dancing 9' is as shown in Table 1.

Table 1. *Word Frequency Analysis Result*

NO.	Word	Frequency	NO.	Word	Frequency
1	dancing 9	1,097	11	thought	176
2	dance	695	12	red wings	162
3	good	484	13	dancer	154
4	stage	453	14	blue eyes	151
5	person	219	15	Choi Soo Jin	142
6	best	212	16	goose bumps	140
7	season	202	17	master	126
8	Kim Seol Jin	196	18	legend	115
9	wonderful	188	19	expression	101
10	judge	184	20	choreography	95

The word frequency analysis showed that the search term 'Dancing 9' appeared the most. In particular, positive words such as 'good', 'best' and 'wonderful' were drawn in the top 10 list of frequent occurrences, and certain people such as modern dancers 'Kim Seol-jin', 'Choi Soo-jin', and the names of the 'Red Wings' and 'Blue Eye' teams that appeared in the 'Dancing 9' programs were frequently mentioned.

Topic modeling

LDA(Latent Dirichlet Allocation) topical modeling was conducted to check the SNS users'

Table 2. *Topic Modeling Result*

NO.	Topic Name	Importance	Keywords(probability distribution)				
1	Discover of Star Dancer	33.2%	dance (.071)	person (.031)	Kim Seol Jin (.020)	good (.019)	contemporary dance (.017)
			genre (.016)	dancer (.016)	art (.015)	judge (.013)	degree (.012)
2	Competitive Structure	16.6%	stage (.078)	good (.045)	best (.045)	red wings (.031)	Kim Seol Jin (.030)
			goose bumps (.027)	season (.019)	blue eyes (.018)	legend (.018)	dancing 9 (.017)
3	Street Dancer	15.7%	dancing 9 (.238)	good (.047)	sister (.033)	season (.020)	dance (.020)
			wonderful (.018)	stage (.016)	legend (.016)	Rian Choi (.016)	couple (.011)
4	Sympathy for Dance	14.7%	dance (.046)	Choi Soo Jin (.028)	Lee Yoon Hee (.024)	wonderful (.023)	good (.022)
			expression (.020)	leg (.019)	movement (.015)	feeling (.014)	acting (.012)
5	Gatekeeping	10.1%	dance (.053)	judge (.049)	jury (.033)	master (.031)	Lee Min Woo (.027)
			Kim Su Ro (.022)	person (.015)	Woo Hyun Young (.013)	Jay Park (.013)	good (.013)
6	Music Effects	9.7%	dance (.029)	person (.027)	dancer (.023)	music (.019)	best (.017)
			ability (.016)	thought (.016)	Lee Yoon Ji (.015)	good (.013)	Kim Tae Hyun (.012)

responses to 'Dancing 9'. As a result, a total of six topics were derived, such as Discover of Star Dancer, Competitive Structure, Street Dancer, Sympathy for Dance, Gatekeeping, Music Effects, as shown in Table 2. To look at the network configuration of each topic and word, the top 10 words according to probability distribution were presented.

1) Discover of Star Dancer

The first topic, Discovery of Star Dancer, consisted of the words 'dance', 'human', 'Kim Seol-jin', 'good', 'contemporary dance', 'genre', 'dancer', 'art', 'review' and 'quality'. If you look at the original data of the words, you can see the love and positive responses of the public as much as the stars with admiration for Kim Seol-jin's dance skills and artistry, such as "I want to keep watching Kim Seol-jin's dance" and "Kim Seol-jin is amazing".

2) Competition Diagram

The second topic, Competition Diagram, consisted of the words 'stage', 'good', 'best', 'Red Wings', 'Kim Seol-jin', 'goose bumps', 'season', 'Blue Eye', 'legend' and 'Dancing 9'. Looking at the original texts of the words, we were able to confirm responses such as "Red Wings fighting", "Red Wings team did just as well as Blue Eye" and "Blue Eye group stage is the best". This topic contained the competition between Red Wings and Blue Eye teams created by the 'Dancing 9' program and the audience's support for each team.

3) Street Dancer

The third topic, Street Dancer, consisted of the words 'Dancing 9', 'good', 'sister', 'season', 'dance', 'wonderful', 'stage', 'legend', 'Ri-an', and 'couple'. Checking the original text of the word confirmed the fans' welcome to street dancer Choi Ri-an, who starred in 'Dancing 9', and the positive evaluation of the couple's choreography with dancer Kim Tae-hyun. Looking at the details, he responded, "I learned the beauty of waacking because of the dancer Choi Ri-an" and "It's cool that you're the choreographer of singer Chung-ha".

4) Sympathy for Dance

The fourth topic, Sympathy for Dance, consisted of the words 'dance', 'Choi Soo-jin', 'Lee Yoon-hee', 'wonderful', 'good', 'expression', 'leg', 'movement', 'feeling' and 'acting'. In this topic, descriptions and evaluations of the movements and expressions of the two dancers were being made based on the video of the confrontation between Choi Soo-jin and Lee Yoon-hee, who starred in 'Dancing 9'. For example, they responded by saying, "Your face looks cool when you raise your

legs", "Your facial expressions and movements are elegant", "Your dance looks good even when you look at someone who is not familiar with the dance" and "Your dance and facial acting are creepy".

5) Gatekeeping

The fifth topic, Gatekeeping, consisted of the words 'dance', 'judge', 'jury', 'master', 'Lee Min-woo', 'Kim Su-ro', 'person', 'Woo Hyun-young', 'Jay Park' and 'good'. In the 'Dancing 9' program, a dance master consisting of a group of professional judges, experts, and non-experts appeared, naming the topic gatekeeping, which means that artists control the system of entering and leaving the dance. Viewers responded to them by saying, "Master Woo Hyun-young is so funny" and "It's better for the masters to react". Therefore, the judges' evaluations of the dancers, the humor and reactions of the masters, have heightened viewers' curiosity and dramatic effects, making them lively.

6) Music Effects

The sixth topic, Music Effects, consisted of the words 'dance', 'person', 'dancer', 'music', 'best', 'ability', 'thought', 'Lee Yoon-ji', 'good' and 'Kim Tae-hyun'. The impression of dancing and singing in 'Dancing 9' was found to have left viewers with a deeper impression and afterglow. For example, comments such as "What's the title of this song?", "Listening to this song reminds me of Blue Eye" and "Dancing brings back the song" showed that the music used as dance music sounds better than usual, or when listening to certain music, it maximizes the musical effect of the dancer who starred in 'Dancing 9'.

Main factors of success

The six topics discussed earlier came to mind after objectively grasping the responses of SNS users who watched the YouTube video of 'Dancing 9'. Therefore, the success factors of the dance survival 'Dancing 9' were presented as 'Star Dancer', 'Competitive Structure', 'Convergence of Diverse Dance', 'High Level Dance Skills', 'Judge and Master Role' and 'Coordination With Popular Music'. Those are discussed as follow.

1) Star Dancer

Through the Discover of Star Dancer topic, which took the largest portion of the topic modeling results, we could see that they have discovered dancers loved by the public and produced star dancers. This theme is one of the major factors behind dance's popularity.

The dance industry has been constantly trying to communicate with public through dance, it has eased the difficult aspects of dance for audience(Lee, 2014). However, as dance stars such as Kim

Seol-jin and Choi Soo-jin were born after 'Dancing 9', SNS users actively supported and sympathized with YouTube comments, creating a fandom phenomenon. At the end of the show, the winning team's Gala Show performance has been sold out at quickly(Shin, September 19, 2014), and then, performances featuring dancers from each team have been sold out. It was a rare case in creative dance performances so far(Lee, 2014). Among them, some dancers became stars and worked in various fields such as advertising, drama, and models, making them so famous that they "wondered if the modern version of Marie Taglioni had been revived?". Therefore, by created a star in the dance, it can be a factor that turned the trend of popularization into the pure art genre.

2) Competitive Structure

The reason for the enthusiastic of viewers in 'Dancing 9' is the confrontation between the two teams, which is characteristic of survival programs. As if sports stimulate the desire to win in a competition, the dance program has set up a binomial confrontation, which involves the two teams' crossings of joy and sorrow, active support from viewers.

Audition and survival programs that instill competitive psychology among participants have been in trended in various genres, including music, dance, physical education, and fashion, starting with 'K-pop Star' in 2012. In particular, the response to why people enjoy audition programs in a survey on audition programs conducted by 'Weekly Dong-A' shows that viewers were participating in their own screening criteria, including harmony of stage production, choreography, dance skills and movements(Lee, 2011). It can also be inferred that by sympathizing with the dancer they supports and expecting them to win the championship, the psychological factors of vicarious satisfaction of the desire to achieve success and the enthusiasm for the decision were at play. This dramatic tension leads to enthusiastic cheering and reaction from broadcast viewers, which made dance more interesting to public.

3) Convergence of Diverse Dance

The characteristic of Dancing 9 is that it is not an individual dance competition, but a match between two teams, 'Red Wings' and 'Blue Eye'. Therefore, convergence skills such as teamwork, different genres of dance are more important than individual skills and techniques. In this program, top dancers of various genres, including modern dance, ballet, Korean dance, dance sports, jazz dance, street dance and k-pop dance, make performances together. In the process of dancing with different people, they gain a sense of group activity and mutual exchange(Yoon & Kim, 2019). Through the fusion of pure art dance and practical dance, the dance was newly presented to the public's level, and the 'Dancing 9' craze began by raising public curiosity. In particular, various dance genres were

given the opportunity to be seen on one stage, and the program was able to see the creative form of the genre, transcending the boundaries of art, which is the modern dance performance form of today. In other words, the program reflects current trends that are as diverse as ambiguous and confusing performances such as dance performances, non-dance, plural arts, convergence performances, interactive performances, and hybrids(Oh, 2013).

Despite the positive aspects of convergence among various dance genres, it is pointed out that a balanced approach to artistry and popularity is needed because the dance community is concerned that it is a stage biased toward commercial planning that lacks artistic concerns(Kim, H. R., 2014). Meanwhile, in an interview with Dancing 9's dancer Lee Sun-Tae, he said that "after the show, the public has shown a positive effect on serious dance appreciation and high level of discernment"(Dance Webzine, 2014). It can't be overlooked that this convergence element of dance has contributed to popularizing dance as a trendy convergence performance art, although it exists to break the boundaries between popular and pure dance art through public media such as TV.

4) High Level Dance Skills

This success factor was found in the Sympathy for Dance topic. Viewers and SNS users who watched the 'Dancing 9' didn't know about dance, but while watching the dancers' movements, they showed surprising reactions as if they were having a new experience in getting goose bumps and emotions. SNS users who watched the video were found to have admired the dancers' high-quality dance skills, expressions of emotions, acting and beautiful dancers, and to appreciate the performers' dancing skills. Through these reactions, TV dance programs should not pursue sensual and fancy dances that focus on they see, or should not focus on commercialization. In order to gain public sympathy, the deep sensitivity and sophisticated beauty of pure dance art must be conveyed simultaneously in popular art that is familiar to public.

5) Judge and Master Role

Judging from the results Gatekeeping of the topic modeling, the role and function of judges and dance masters in 'Dancing 9' are the main factors that add to the interest of the program's interest. The dance masters composed of experts and non-experts, who shared the joys and sorrows of dancers in the process of serving as mentors for the dancers and preparing for the stage. It also featured dance celebrities as judges for professional evaluation. The judges suggested professional explanations and immediate feelings whenever the dancer danced, which was an opportunity for public to learn the diversity and difficulty of movement and to experience pure dance indirectly.

Through the gatekeeping structure, which consists of judges and dance masters, viewers were able

to enjoy the dance more. Also, the gatekeeping structure played an important role in conveying the emotions and evaluations felt by the judges to the viewers.

6) Coordination with Popular Music

Through the Music Effect topic of the topical modeling results, viewers showed great interest in dance music expressed by dancers' movements. 'Dancing 9' uses music that is familiar to public so that the audience can feel comfortable rather than artistic profoundness. Not only they listened to music, but they also added beautiful gestures to the popular song, allowing them to appreciate the five senses with increased visual, auditory, and tactile satisfaction. Dance is shows visualizations of music and expressing music through the dancer's body. Until now, fine art dancer did immersed in their artistic world and choreographed against the backdrop of high-quality modern music that is difficult for ordinary people to hear. Also, most of these works have felt limited in win the sympathy and smooth communication. 'Dancing 9' suggests that these limitations were overcome by popular music and advocated artistic equalism that balances the artistry and popularity of dance.

Conclusion

The purpose of this study is to analyze SNS user responses to the TV dance program 'Dancing 9' and to discuss success factors. To achieve the purpose of the research, we collected the comment data registered in YouTube's 'Dancing 9' video contents and conducted word frequency analysis and topic modeling. The analysis results are as follows.

A total of six topics were derived from the topical modeling: Discover of Star Dancer, Competition Structure, Street Dancer, Sympathy for Dance, Gatekeeping and Music Effects. Based on these topics, the success factors of 'Dancing 9' were discussed: the discovery and produce of star dancers, the competition structure of the Red Wings and Blue Eye teams, convergence and harmony between different dance genres, dance skills with both popularity and artistry, gatekeeping elements that create dramatic tension, it was presented as a combination of popular music and dance to the level of the public. Based on the results of this study, it should be used as an academic basis for planning and operating TV dance programs and popularizing and expanding the dance industry in the future.

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