Original Article

A Study on the Concept and Utilization of the Sound by South Korean MZ Generations

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Abstract - Sound affects not only humans but also animals and plants. Among them, it is a result of research that sound exerts a more important influence on people. The research results of existing music therapy and sound therapy also verify how much sound is involved in humans. Based on such research results, a survey was conducted and analyzed on the concept and use of sound by MZ generations in Korea. As a research method, I discovered, verified and classified the sounds that young people in Korea like and dislike hearing at the present time. In addition, the reason for selecting the sound and the method of utilization were also analyzed through a questionnaire survey. The reaction to sound differs for each person, and the standards may be ambiguous. However, if the data continues accumulating, it will be possible to turn it into big data. The results of this study will be an indicator that can be used in various ways for the MZ generation of Korea and young people around the world. Furthermore, it will be important data on how to use sound for what purpose.

Keywords - MZ generation, Good-to-listen sounds, Bad-to-listen sounds, Sound concept, Application plan.

1. Introduction

Just as the listeners are stimulated in extreme ways by soft and angry voices, the effect of sound on people is great. Just as people fall in love with the melody of music, sound can be a medicine if used well. Sound has no meaning and value as a sound unless the listener gives it meaning. Research on the use of sound has continued, and groundbreaking papers have been published in the academic world. Sound can be just a wave that shakes the air and then disappears. However, if the sound is meaningful and used beneficially for people, it can be a good resource. In order to utilize sound as a resource, it is necessary to understand the concept of young people's sound, which can become a major player in economic activities in the near future. In order to understand the concept of sound in young people, reliable data were derived through a questionnaire on the reaction of the Korean MZ generation to sound. In this paper, research was conducted to investigate the concept of the sound of the MZ generation in Korea, convert it into data, and use it in the right direction. By broadly dividing sounds into good-to-listen and bad-to-listen sounds to hear, we investigated which sounds the Korean MZ generation considers good-to-listen sounds or bad-to-listen sounds. For this study, 45 male and female university students in Korea were surveyed. The questionnaire consisted of 6 short-answer questions to describe good-to-listen sounds and bad-to-listen sounds and to explain the reasons, and an indepth survey was conducted on the field to use these sounds. The results obtained through this survey will be able to be

established as excellent data for the correct use of sound for the MZ generation of Korea as well as young people around the world in the future.

2. A Study on the Concept and Use of Sound by the MZ Generations

A survey was conducted to check how the MZ generation in Korea establishes the concept of sound. The survey subjects were young male and female college students in their early 20s who are at the center of the MZ generation in Korea. The subjects were 45 male and female students at D University in Gyeonggi-do, Korea, and 6 short-answer questions were presented. First of all, sounds were divided into good-to-listen sounds and bad-to-listen sounds to hear in a broad sense. First of all, a survey was conducted on the concept of sound to find out what kind of sounds the MZ generation in Korea thinks they like to hear and what sounds they do not like to hear. Second, a survey was conducted on the reasons why the MZ generation selected sounds that they liked to hear and those that they did not like to hear. Thirdly, a survey was conducted on how to use sounds that MZ generations like to hear and sounds that they do not want to hear.[1]

2.1. MZ Generations

The term MZ generation is a new term coined in Korea. It refers to a generation that combines the 'millennial generation' born between the early 1980s and the 2000s and



the 'Z generation' born between the mid-1990s and the 2000s. The MZ generation is a generation born in the multimedia age through the digital environment and new media. It is a smart concept generation that prioritizes using mobile devices and works based on SNS. The MZ generation shows consumption characteristics that value individual happiness rather than group, sharing rather than possession and experience rather than a product. The MZ generation also has a consumption concept of buying things with value and meaning rather than simply thinking of them as materials and purchasing them. In addition, maley of these generations tend to value the present rather than the future and taste rather than price, so they are more familiar with the flex culture and luxury consumption than any other generation.[2]

2.2. The concept of Sound for MZ Generation's Good and Bad-To-Listen Sounds

In order to find out the concept of sound of the Korean MZ generation, a survey was conducted. The concept of sound was divided into sounds that are like to hear and sounds that are disliked to hear in a broad sense, and it was a process of checking the details. It is believed that the process of conducting this survey was based on the process in which Korean MZ generations reacted to various sounds and were able to present their opinions. In order to investigate the MZ generation's concept of good and bad-to-listen sounds, male and female university students, the center of the MZ generation, were asked to answer with their own concepts freely. When they were asked to answer freely, a wide variety

of sounds were derived, so the sounds were organized and written to some extent.[3]

2.2.1. The Concept About the Good-To-Listen Sounds

In order to find out the concept of good-to-listen sounds among the Korean MZ generation, they were asked to report three types of good-to-listen sounds for each male and female in a short answer format. College students at the center of the MZ generation confirmed the concept of sound among young people in Korea by finding out what kind of sound they are good at listening to. As a result of the survey, very diverse answers came out, so it was difficult to record all of them in detail, so sounds with similar meanings were grouped together and explained in a graph.

The MZ generations in Korea chose music the most as a sound that is good to listen to, both male and female. 28 males and 20 females chose music as a good sound to listen. Although there were slightly more males, they considered music played with instruments such as piano, guitar, drums, or songs or music as good sounds to listen to; both men and women chose the sound of nature as a good sound to listen to. The MZ generations thought of the birdsong or the flowing stream as good sounds to listen to. Thirdly, they chose a humale voice, but they thought that a complimenting voice, a friendly voice, and a voice of the opposite sex were good to listen to.

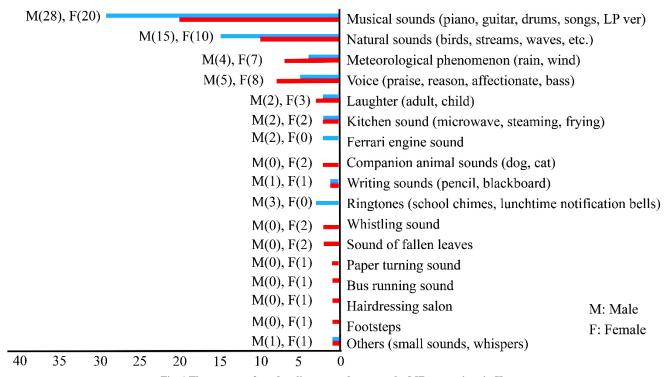


Fig. 1 The concept of good-to-listen sounds among the MZ generations in Korea $\,$

In addition, most of the sounds that are pleasant and comfortable to listen to, such as the sound of meteorological phenomena such as rain and wind, the sound of music, the sound of making food, and the sound of writing letters, were considered good to listen to. The peculiar thing was that it was interesting to hear the Ferrari engine sound or the mealtime notification bell as the sound that only men chose. In addition, although there are a few people, there are good sounds selected only by female students, such as whistling, falling leaves, paper turning, bus operation, beauty salon, and shoe footsteps.[4][5]

2.2.2. The Concept About the Bad-To-Listen Sounds

In order to find out the concept of the bad-to-listen sounds of the MZ generation in Korea, they were asked to write 3 kinds of bad-to-listen sounds for each male and female in a short answer format. College students at the center of the MZ generation were able to confirm the concept of sound among young people in Korea by examining what kind of sound they do badly to hear. As a result of the survey, very diverse answers came out, so it was difficult to record all of them in detail, so sounds with similar meanings were grouped together and explained in a graph. For the Korean MZ generation, both males and females chose fricative the most regarding the sound they bad-to-listen sounds.

Twelve males and 11 females chose the sound they did not like to hear. Both males and females were similar in number. and the sound of metal rubbing, the sound of sudden brakes, and chalk scratching the blackboard were harsh to their ears, so they chose the sound they did not want to hear seems to have chosen. Second, both males and females chose static or noise as a sound they did not want to hear. It seems that noise or noise is an annoying noise that interferes with daily life, so I think it is something I do not want to hear. Third, they chose humale screaming, but they thought it was a sound they did not want to hear because it was a high-frequency sound that strongly stimulated their hearing. In the case of unpleasant sounds, there was a case where there was a difference in the number of men and women and Instantaneous high-pitched sounds such as gunshots, thunder, and popping balloons, mechanical sounds such as construction sites and vacuum cleaners, speaker noise, radio waves, and snoring. Women chose mostly jarring sounds, such as aging and adults or babies crying. Moreover, nagging, such as criticizing or complaining, and dirty sounds, such as defecating, urinating, or spitting, were more selected by men. What is unusual is that only men disliked the sound of bugs and mosquitoes. Other than that, the noise of people gathering and chatting, the noise of traffic, the sound of alarms, and the cries of animals, even though it is a small number of people, thought that both men and women did not want to hear it.[7][17]

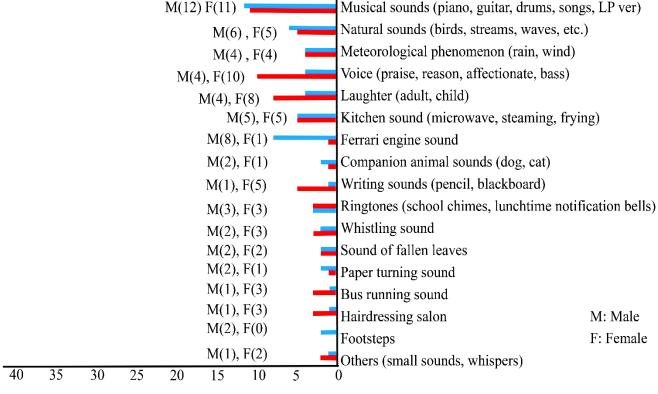


Fig. 2 The concept of bad-to-listen sounds among the MZ generations in Korea

Table 1. Reasons for selecting good-to-listen sounds for each gender of the MZ generations in Korea

| Gender | Male | | Female | |
|--------|--|-----------|---------------------------------|-----------|
| Rank | Detail | personnel | Detail | personnel |
| 1 | It is comfortable | 11 | It makes her feel better | 22 |
| 2 | It makes him feel better | 9 | It is comfortable | 20 |
| 3 | Because it's the sound of his favorite thing | 3 | Because there is no reluctance | 3 |
| 4 | Because it's fun and upbeat | 3 | Because it feels soft | 2 |
| 5 | Became it's clear | 2 | Because she still wants to hear | 2 |
| 6 | Because it stimulates | 2 | Because it makes me laugh | 2 |
| 7 | Because it always hears | 2 | Because it's worth watching | 2 |
| 9 | Because it is excited | 1 | Because it sounds pretty | 2 |
| 10 | Because it makes him laugh | 1 | Because she is used to it | 2 |
| 11 | Because it doesn't get tired | 1 | Because it is quiet | 1 |
| 12 | Because it's refreshing | 1 | Because it's sweet | 1 |
| 13 | Because it enriches | 1 | Because it's sleepy | 1 |
| 14 | Because it wants to make a song | 1 | Because it's relaxing | 1 |
| 15 | Because it makes him feel emotional | 1 | | |
| 16 | Because it focuses | 1 | | |

Table 2. Reasons for selecting bad-to-listen sounds for each gender of the MZ generations in Korea

| Gender | Male | | Female | | |
|--------|--|-----------|----------------------------------|-----------|--|
| Rank | Detail | personnal | Detail | personnal | |
| 1 | Because it makes him feel bad | 9 | Because it's noisy | 18 | |
| 2 | Because it's noisy | 4 | Because she cares | 9 | |
| 3 | Because it's annoying | 4 | Because it makes her feel bad | 8 | |
| 4 | Because stress increases | 6 | Because she is stressed | 5 | |
| 5 | Because it's creepy | 4 | Because it gives her goosebumps | 4 | |
| 6 | Because the body rejects | 3 | Because she doesn't want to hear | 3 | |
| 7 | Because he is angry | 2 | Because she has no mind | 3 | |
| 9 | Because it's scary | 2 | Because everyone hates it | 1 | |
| 10 | Because his head hurts | 2 | Because it lingers in her head | 1 | |
| 11 | Because it hurts | 2 | Because she is surprised | 1 | |
| 12 | Because it's a sound, he doesn't want to hear | 2 | Because it frowns | 1 | |
| 13 | Because it's the sound of things he hates | 1 | Because she is angry | 1 | |
| 14 | Because it seems that something is wrong with the body | 1 | Because it sounds sharp | 1 | |
| 15 | Because he gets tired | 1 | Because it's noise | 1 | |
| 16 | Because his body is sensitive | 1 | Because it sounds dirty | 1 | |
| 17 | | | Because it's noise | 1 | |

2.3. Reasons for Selecting Good-To-Listen Sounds and Bad-To-Listen Sounds by the MZ Generation

When we asked the Korean MZ generation why they chose the sounds they good-to-listen sounds and bad-to-listen sounds, various reasons came out. The reason for selecting the sound that is good-to-listen sounds and the reason for selecting the sound that is bad-to-listen sounds was divided into male and female genders to investigate. There were common reasons between men and women, but there were various reasons with slightly different contents depending on gender.

2.3.1. Reasons for Selecting Good-To-Listen Sounds

Among the reasons for selecting good-to-listen sounds, most of the reasons that men and women share are that they feel better, feel comfortable, and find a sense of security when they hear them. In addition, there was a reason why they chose it because they were thrilled, excited, and excited when they heard it. In addition, there were some differences between men and women in the reason for selecting a sound that was goodto-listen sounds. Among them, the unusual reason was that in the case of males, there was a reason that they selected it because it was a sound that they liked and were interested in. In the case of a female, there were male reasons why they selected it because it was good to enjoy. A survey was also conducted to find out what kind of thoughts the Korean MZ generation had when choosing good-to-listen sounds. The reason why both men and women chose a sound that was good-to-listen sounds was that they felt good or comfortable, and the reason was the most common reason. Next, the opinions of men and females differed slightly, with males showing a slightly more assertive view and females showing a slightly more calm view. The male explained that he chose a pleasant sound to listen to because it was a sound he liked and because it was exciting and light. The female showed the opinion that the sound was chosen as good-to-listen sounds because it was not objectionable and had a soft feeling. Other reasons for choosing good-to-listen sounds include unconventional reasons that men chose it because they were stimulated and excited, and there were opinions that they chose it because they did not get tired of it, they had rich emotions, they wanted to make songs, and they seemed to be able to concentrate well. Females suggested that they chose it as a sound that they wanted to hear again, that it was worth listening to, and that it was a pretty sound.[8][9]

2.3.2. Reasons for Selecting Good-To-Listen Sounds

Among the reasons for selecting bad-to-listen sounds, most of the reasons that men and women have in common are that they are noisy and annoyed to hear, which makes them worry and feel bad. There were also other reasons that listening to it hurt your ears, gave you goosebumps, and caused stress. In addition, there were some differences in the reasons for selecting bad-to-listen sounds between males and females. Among them, the unusual reason was that in the case of a male, his nerves were stimulated, his condition deteriorated, and he sounded like something was wrong with

his body, so he was selected. In the case of women, there was also a reason why dirty or sharp sounds were selected as unwanted sounds. A survey was also conducted to find out what thoughts the Korean MZ generations had when choosing the bad-to-listen sounds. The reason why both males and females chose the bad-to-listen sounds was that it made them feel bad, were loud, worried, and stressed the most. The reason for choosing the bad-to-listen sounds was the general opinion shared by both males and females. The second largest group of people expressed the opinion that they chose the bad-tolisten sounds because it was creepy, body-rejecting, angry, and painful. In addition, in the case of men, there was a reason why they chose the sound of an object they usually disliked, and in the case of women, they chose the sound they did not want to hear because it was a sound that kept popping up in their heads. Also, in the case of a male, it was surprising that the reason why he chose a scary sound as bad-to-listen sounds came out.[10][18]

2.4. Opinions on the use of Good-To-Listen Sounds and Bad-To-Listen Sounds of the MZ Generations

In the process of researching the concept and use of sound by the MZ generations in Korea, the sound was divided into sounds that are good-to-listen sounds and bad-to-listen sounds in a broad sense and was investigated through a questionnaire survey. Indeed, we checked how the Korean MZ generations intend to utilize sounds that are good-to-listen sounds and how to utilize bad-to-listen sounds. As a result of the survey, a wide variety of opinions were presented for both good and bad sounds to listen to. Regardless of gender, most opinions were presented in common, but unusual contents were also observed. First, men's and women's common and differentiated opinions on using good-to-listen sounds are confirmed. Then the opinions on the use of bad-to-listen sounds are also identified.

2.4.1. Opinions on the Use of Good-To-Listen Sounds

The reason why Korean male and female MZ generations selected good-to-listen sounds was investigated, and furthermore, opinions on how to use the good-to-listen sounds in which fields were investigated through a questionnaire survey. Even when selecting sounds that are good to hear, the opinions of the MZ generations were mostly novel regardless of gender, and there were some unique differences between male and female, so male and female opinions were classified and recorded. As for the areas where they want to use goodto-listen sounds the most, both males and females said they would like to use them for psychotherapy or insomnia treatment. Next, when it comes to utilizing good-to-listen sounds, the characteristics of each male and female were as follows: males had a lot of utilization plans from the producer's point of view, and females had maley opinions from the beneficiary's point of view. Men had an opinion that they would like to use it for performance production, music work, advertisement production, and game production. Women had an opinion that they would like to use it for a change of mood or viewing while taking a break. In addition, there was also an opinion that men would use it for appreciation at cafes, hobbies, and driving. There was also an opinion that women use it for hobbies or studying. There were also opinions in common with male opinions and an opinion from the producer's side that they would use it for school

broadcasting stations. In addition, among the opinions of females, there were unusual opinions, and the opinion that it would be nice to use it when in the bathroom or to use it at a construction site, and the opinion to renovate the atmosphere with sound was interesting.[12][13]

Table 3. Ways to use good-to-listen sounds for each gender of the MZ generations in Korea

| Gender | Male | | Female | |
|--------|--|-----------|----------------------------------|-----------|
| Rank | Detail | personnal | Detail | personnal |
| 1 | Use it for psychotherapy. | 8 | Use it to treat insomnia. | 10 |
| 2 | Use it for performances and broadcasting. | 6 | Use it for psychotherapy. | 8 |
| 3 | Use it for music work. | 5 | Use it for a change of mood. | 4 |
| 4 | Use it for sleep. | 3 | Use it when taking a break. | 3 |
| 5 | Use it when listening. | 2 | Let's use it in her daily life. | 3 |
| 6 | Use it in a cafe. | 2 | Use it when performing. | 3 |
| 7 | Use it when making advertisements. | 2 | Use it when studying. | 2 |
| 9 | Use it when doing something he doesn't want to do. | 2 | Use it while in the bathroom. | 2 |
| 10 | Use it for prenatal education. | 2 | Let's use it when needed. | 2 |
| 11 | Use it for his hobbies. | 1 | Use it when she feels good. | 1 |
| 12 | Use it to change the mood. | 1 | Use it when dating. | 1 |
| 13 | Use it for making games. | 1 | Use it while walking. | 1 |
| 14 | Use it while driving. | 1 | Use it for hobbies. | 1 |
| 15 | Use it in the morning after waking up. | 1 | Use it for school broadcasting. | 1 |
| 16 | Use it when giving compliments. | 1 | Use it at the construction site. | 1 |

Table 4. Ways to use bad-to-listen sounds for each gender of the MZ generations in Korea

| Gender | Males | | Female | |
|--------|---|-----------|------------------------------------|-----------|
| Rank | Detail | personnal | Detail | personnal |
| 1 | Use it when bullying. | 6 | Use it when bullying. | 6 |
| 2 | Use it when punishing. | 3 | Use it when waking up. | 6 |
| 3 | Use it for movies and dramas. | 3 | Use it when interrogating. | 6 |
| 4 | Can't utilize | 2 | Use it when punishing. | 4 |
| 5 | Use in dangerous situations. | 2 | Use when forced to work. | 2 |
| 6 | Use it for the bad sound museum. | 1 | Use it when playing pranks. | 2 |
| 7 | Use it when waking up. | 1 | Use it when she is irritable. | 2 |
| 9 | Use it when he says something mean. | 1 | Can't utilize | 2 |
| 10 | Use it when he goes get money. | 2 | Use in dangerous situations. | 1 |
| 11 | Use it when making games. | 1 | Let's use it for crime prevention. | 1 |
| 12 | Use it on the battlefield. | 1 | Use it for bad videos. | 1 |
| 13 | Use it when revenge noise between floors. | 1 | Use it to keep quiet. | 1 |
| 14 | Use it when it causes noise pollution. | 1 | Use it to surprise. | 1 |
| 15 | Use it when criticizing others. | 1 | Use it when he is alone at home. | 1 |
| 16 | Use it when reflecting. | 1 | Use it to draw attention. | 1 |

2.4.2. Opinions on the Use of Bad-To-Listen Sounds

Similar to the reasons for selecting good-to-listen sounds. the reason for selecting bad-to-listen sounds was able to know the consciousness of the MZ generations in Korea. Most of the contents were shared by both males and females, but there were unique characteristics between men and women in the details, so they recorded them in detail. When it comes to ways to use bad-to-listen sounds, both men and women shared maley opinions, such as when harassing or punishing someone, waking them up, or forcing them to do something. In the case of men, there were maley opinions that could be presented from a producer's point of view, such as when making a movie or drama, when making a bad sound museum, or when making a game. There was also a producer's position that females would use it for bad videos, but the opinion that it would be used to prevent crime or dangerous situations was novel. In addition, there were somewhat radical opinions such as revenge for war or noise between floors, when going to get money, when blaming others, when wanting to cause noise pollution, etc. However, there was also an opinion that it would be used in everyday life, such as when waking up or reflecting. There was. Most of the females said that they wanted to use it in everyday life, such as when irritating, surprising, quieting, or attracting attention. Among them, there was an opinion that they did not want to use them anywhere, so they were able to read their feminine mind.[14][15]

3. Wood Material Interference Type Sound Barrier

The fact that both men and women of the MZ generation chose music or nature sounds as good to listen to sounds confirmed that they also had basic emotions similar to those of the general public. Second, both men and women of the MZ generation chose the voices of praise, the voice of the opposite sex, and the friendly voice among humale voices, and thirdly, both men and women chose the sound of cooking and laughter. It also showed a unique concept of sound that can be answered. The fact that males chose the Ferrari engine sound and females' good-to-listen sounds to companion animal sounds shows that MZ generation youngsters have a very honest concept of sound. As for a reason for choosing the bad-to-listen sounds, men expressed a little rough and coercive

opinion, but surprisingly, they were able to find a feminine opinion.

It was found that females had a lot of interest in the environment by selecting sounds that could be classified as noise in real-life bad-to-listen sounds. In terms of utilization of sound, men had a strong producer side, so there were maley opinions that they would use it for the production of movies, broadcasting dramas, advertisements, and games. There were maley opinions from women that they would use it in the position of a beneficiary who uses it in real life.

4. Conclusion

The concept of sound of Korean MZ generations was investigated. As a result, most male and female young people chose music, sounds of nature, and voices of friendly people or the opposite sex as good-to-listen sounds. Also, most males and females chose sharp friction, screams, horns, or explosions as the bad-to-listen sounds. From this point of view, it was found that the sound concept of the MZ generations in Korea is generally common sense. From this point of view, it was found that the sound concept of the MZ generations in Korea is generally common sense. Among them, in terms of good-to-listen sounds, males chose the Ferrari engine sound, females chose the sound of a beauty salon, and their expressiveness was honest and confident. Also, when choosing a bad-to-listen sound, both males and females were honest and free, choosing nagging or dirty sounds. In terms of using good-to-listen sounds, men presented various ways to utilize them from the producer side, and females showed that they were seeking ways to utilize them from the listeners' perspective. As for the use of bad-tolisten sounds, both males and females expressed the opinion that they would use them to punish or sanction the other person, and there was also an opinion that the opposite opinion could not be used because it was a bad-to-listen sound. In addition, it was reasonable because there was an opinion that it would be good for men to use unwanted sounds for movies or games from the producer's point of view and for women to use it as a warning sound to prevent crime or warn dangerous places. It is judged that these results can be used as data in various fields such as business, marketing, design, and advertising for young people.

References

- [1] Soo Hee Bae, "Spatial Representation Characteristics of Lifestyle Shop for Generation MZ: focus on the Interior Select Shop," Master's Thesis, Hansung University Graduate School: Department of Media Design Interior Design, 2021. [Publisher Link]
- [2] Young Sil Jang, "The Effects of Sociocultural Attitudes toward Appearance and Interpersonal Relationships on the Appearance Maleagement Behavior of Generation MZ," Master's Thesis, Sungshin Women's University Graduate School of Beauty Convergence: Department of Beauty Convergence and Special Make-up Major, 2021.
- [3] Jung-hieh Shon, Chan-souk Kim, and Hyun-seon Lee, "A Study on the Response of Each Generation to the Communication Characteristics of the MZ generation-Focusing on Generation MZ, Generation X, and Baby Boomers," *Journal of Communication Design*, vol. 77, pp. 202-215, 2021. [Google Scholar]
- [4] Myung Jin Ban, "A Study on Digital Milieu and Media Practices of Audience with Audio and Sound: Focused on Actor Network Theory and Individuation," *Regular Conference on Korean Broadcasting Society*, 2022.

- [5] Tae Min Ha, Sang Hoon Gang, and Sung Won Jho, "A Study on Hazardous Sound Detection Robust to Background Sound and Noise," *Journal of Korea Multimedia Society*, vol. 24, no. 12, pp. 1606-1613, 2021. [Google Scholar]
- [6] Yahya Isik, and Mustafa Tuzla, "Investigation of Sound Absorption Performance of Roof Panels in Automobiles," *SSRG International Journal of Mechanical Engineering*, vol. 9, no. 12, pp. 1-6, 2022. [CrossRef] [Google Scholar] [Publisher Link]
- [7] Min Jung Shon, "Sound, Ecology, and Ecomusicology, Korean National University of Arts, Korean Art Research Institute," *Korean Art Research*, vol. 33, 2021.
- [8] Byung Joon Kwon, "My Instrument, My Sound" Graduate School of Environmental Studies, Seoul National University, vol. 67, 2021.
- [9] Young Sun Kim, Min Ah, and Jung Ho Jeong, "Review of Indicators and Standards Related to Sound Intelligibility of Architectural Acoustics and Broadcasting System," *Journal of Standard Certification Safety Society*, vol. 11, no. 2, pp. 47 61, 2021. [CrossRef] [Google Scholar] [Publisher Link]
- [10] Kwang-sik Baek, "Effects of Forest Sound on Physiological and Psychological Stability and Concentration of College Students," *Kongju National University Graduate School*, 2021.
- [11] B. Sai Bharadwaj, and Ch.Sumanth Kumar, "A Novel Digital Phonocardiography Method to Identify the Cardiac Sounds through Intrinsic Time Scale Decomposition and Inter time space Measurement Between Cardiac Sounds," *SSRG International Journal of Electrical and Electronics Engineering*, vol. 9, no. 12, pp. 22-29, 2022. [CrossRef] [Publisher Link]
- [12] Da Woon Lee, and Min Gu Kim, "The Analysis of Classification Learning Models with Augmented Environmental Sound Data," *Conference of the Korean Institute of Communication and Communications*, 2020.
- [13] Kim Ki-nyeon "A Study on the Development Method About Automated End-to-End Testing of AI Voice Assistant by Using Audio Signal Data Interaction," *Actual Journal of Computing in the Information Science Society*, vol. 26, no. 9, pp. 424-428, 2020. [CrossRef] [Publisher Link]
- [14] Jin Bae Park, Teerath Kumar, and Sung Ho Bae, "Search of an Optimal Sound Augmentation Policy for Environmental Sound Classification with Deep Neural Networks," *Conference on Korean Society of Broadcasting and Media Engineering*, pp. 18 21, 2020. [Google Scholar]
- [15] Sung Jea Hong et al., "Real-Time Health Monitoring with CSI and Audio Recognition," Winter Conference of the Korean Society for Communications and Communications, pp. 509–510, 2020.
- [16] Hitesh Paghadar, and R. A. kantaria, "Accurate Estimation and Mitigation of Audible Sound using Novel Technique of Flux Density Reduction at Design Stage in Transformer," SSRG International Journal of Electrical and Electronics Engineering, vol. 3, no. 10, pp. 12-15, 2016. [CrossRef] [Google Scholar] [Publisher Link]
- [17] Il Young Jho et al., "Identification of Commonalities of Sound that Give Peace to People," Summer Conference of the Korean Society of Communications and Communications, 2020.
- [18] Kyo-seong Song, [Cultural Criticism] The Voice of the Heart, From Daily Life, Today's Literary Criticism, 2020.