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Original Paper

The Influence of Background Music on People's Judgment of others on Social Media

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Abstract

This study explored whether background music on Social Networking Service (SNS) can influence people's judgments about others' personalities. We used the most popular SNS app in Korea and manipulated the background music. Forty-four participants were recruited and randomly assigned one of two conditions: music from either classical or rock genres. After exploring the profile, the participants answered a questionnaire asking them to assess the profile's owners' personality. It was found that both male and female participants viewed the profile owner's personality differently depending on the background music. The implication of personality judgment in an SNS context was discussed.

Keywords

background music, profile image, personality, judgment

1. Introduction

Our lives before have been impacted significantly by the rise of social media. This new mode of communal interaction has already left a mark on human history, showing a distinct change in people's lives in the years since its appearance. Freed from the burden of filtering out irrelevant information, people are able to use social media to access content tailored to their preferences. Based on algorithmic correlations, people are exposed to various opportunities and experiences they would never have otherwise encountered. Most importantly, social media plays a major role in the modern world as a communication tool.

Especially in recent years, because we cannot see each other face to face as much as we did before due to the outbreak of Covid-19, online communication has become an inextricable part of our lives. It allowed people to stay in touch with each other without putting their health or the safety of their community at risk. Through these communication tools, we freely express our identities by sharing

selfies, photos, videos, music, thoughts, opinions, emotions, and beliefs. As more and more people rely on and spend time on social platforms, we make an increasing number of first-time acquaintances in online spaces. Since the only information we have about these new people is what we find online, we tend to judge them based on what appears on their profiles. Accordingly, the impact of Social Networking Services on our social experience has gained a lot of scientific attention, and mobile communication applications (a.k.a. messaging apps) are at the center of this discourse. Many researchers have investigated how communication via a messaging app is different from the one through face to face (Jaafar et al., 2014; Lee et al., 2011; Nguyen et al., 2021). Although there are various types of mobile communication tools, it is reasonable to start with an app that is the most widely used by people to investigate how an SNS influences our thinking and feeling. In South Korea, KakaoTalk is the most popular mobile messaging app. Although it is a mobile messenger app, KakaoTalk has a lot of functions which are closely aligned with our behavior in everyday life, such as talk (chat, voice talk, video talk), sending gifts, money transfer, and so on. According to Kakao Corp, there were more than 47.5 million active users in South Korea in 2Q 2022 (Kakaotalk, 2022). Considering the population of South Korea, which is 51.8 million as of October 2022, it can be assumed that most people who live in Korea use this mobile messaging app (World Population Review, 2022). Furthermore, there were more than 53.3 million worldwide users (Kakaotalk, 2022). That said, less is known about how profile information in the app influences on other users' perception. While the app covers the various user activities, it has the function to express user's identity as a way of representing the user. The app has a profile main page where users choose any image as an avatar to represent their identity, write a text bio, customize the page theme, and select background music. Therefore, the personal profile itself delivers condensed information about the user and other users can conjecture the user's characteristics based on the provided information. In the contact list page, you can select a person whom you want to interact with. Once you click the person, you can see his or her main profile page in full screen where a user uploads his/her favorite profile photo and music (Figure 1).

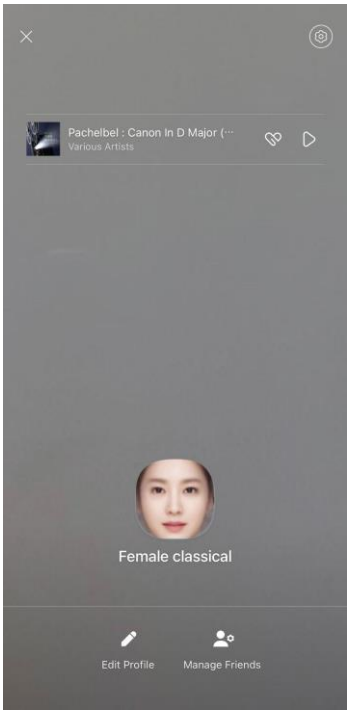

Figure 1. A Basic Profile Page in Kakaotalk

2. Influence of Music

Music functions in various ways and has numerous influences on human life, such as delivering identity (North & Hargreaves, 1999), regulating mood and emotion (Carlson et al., 2015; Saarikallio, 2008), and impacting human development and everyday life (Welch et al., 2020). Lehmann et al. (2021) showed that while background music helps people with better transfer outcomes, background music has no effect on memory recall, especially for the extrovert. Gorn (1982) explored the effects of music in advertising on decision making behaviors based on classical conditioning approach. He found that preference of music has an impact on the judgment of product purchasing behaviors. When a product was paired with a preferred music, the product was more likely to be purchased, whereas if the music was disliked, the product was rarely purchased.

Regarding the relationship between music preference and personality, North (2010) investigated the extent to which personality factors correlate with liking for a very wide range of musical styles using the Big 5 Personality Inventory. He found that personality factors were related to both preference for certain musical styles and participants' self-reported reasons for listening to this music. The study implies that people can sympathize with each other by sharing their favorite music and can intuitively judge others' personal characteristics based on musical taste as well. In the same vein, based on questionnaire data from 341 respondents, Chamorro-Premuzic et al. (2010) showed that the relationship between individual differences and specific uses of music, where open and intellectually engaged individuals, and those with higher IQ scores, tended to use music in a rational/cognitive way, while neurotic, introverted and non-conscientious individuals were all more likely to use music for emotional

regulation.

Greenberg et al. (2022) investigated whether there are universal patterns in musical preferences, especially for Western music. They included self-report measures of the Big Five personality traits and demographics. The results showed that individual differences in preferences for Western music can be organized in terms of five latent factors that are invariant across countries and that generalize across assessment methods. Also, they found that the patterns of correlations between personality traits and musical preferences were largely consistent across countries and assessment methods. This study implies that music and personality are closely related, and this means that music could serve as a factor in assessing people's personalities.

In this sense, background music on the app profile page may impact the opinions formed by those who view the page. Since background music is selected by the profile page user, the visitors make an instant judgment about the page owner. Although there were studies to examine the relationship between music and cognitive load or arousal, music, and consumers' choices (Gorn, 1982), music and personalities (Lehmann et al., 2019), and music and perception, there are few studies that examined the effect of background music on judgment by visitors of the other person on social media. Therefore, we decided to go further in investigating whether music affects how people view and judge other people on social media by using KakaoTalk, where background music takes up a major part in people's profiles. We hypothesize that there are different judgment patterns of SNS profile owners depending on the type of music.

2. Method

2.1 Participants

Forty-four participants (24 male) were recruited in receipt of a remuneration from advertising and flyers posted on a website. The participants' ages range from 23 to 33.

2.2 Materials

We made four Kakaotalk profiles. One male who set hard rock music as his background music, one female who set hard rock music as her background music, one male who set classical music as his background music, and one female who set classical music as her background music. We chose hard music and classical music because these two were the most contrasting extremes (most calm and most loud) among many genres of music that could clearly show its effect, which would be the independent variable, on people's judgments of others, which would be the dependent variable. The chosen hard rock music is Toxicity by System Of A Down. The chosen classical music is Pachelbel: Canon D Major. We decided to set the same music on profiles of both genders to reduce the bias that may be caused by sex. For a profile picture, we used a synthetic average of Korean male and female faces obtained from *Facial Volumization with Fillers* (Seo, 2021). We wanted to use faces that won't be recognized much by participants to reduce any possible bias.

To measure participants' judgment of the person on the Kakaotalk profile, we used a simple version of

Myers Briggs Type Indicator (MBTI) because it is the most direct way to examine the effect of independent variable on dependent variable, ruling out the possibilities of inclusion of bias in setting up standards of personality types based on experimental results. The simplified Myers Briggs Type Indicator (MBTI) obtained from NERIS Analytics Limited (2022) was used to categorize participants' personalities. Myers Briggs Type Indicator has 8 personality keys: E (extroversion), I (introversion), S (sensing), N (intuition), T (thinking), F (feeling), J (judging), and P (perceiving). According to Arc Studio, people with MBTI results that have an E (extroversion) are "energized by people, enjoy a variety of tasks, a quick pace, and are good at multitasking." People with MBTI results that have an I (introversion) "often like working alone or in small groups, prefer a more deliberate pace, and like to focus on one task at a time." People with MBTI results that have S (sensing) are "realistic people who like to focus on the facts and details and apply common sense and past experience to come up with practical solutions to problems." People with MBTI results that have N (intuition) "prefer to focus on possibilities and the big picture, easily see patterns, value innovation, and seek creative solutions to problems." People with MBTI results that have T (thinking) "tend to make decisions using logical analysis, objectively weigh pros and cons, and value honesty, consistency, and fairness." People with MBTI results that have F (feeling) "tend to be sensitive and cooperative and decide based on their own personal values and how others will be affected by their actions." People with MBTI results that have J (judging) "tend to be organized and prepared, like to make and stick to plans, and are comfortable following most rules." People with MBTI results that have P (perceiving) "prefer to keep their options open, like ro be able to act spontaneously, and like to be flexible with making plans."

2.3 Design

To test if there is a difference in judging other's personality with a different type of music, two different types of music were used, rock and classical music. Four Kakaotalk profiles: female with rock music as background music, male with rock, female with classical, and male with classical.

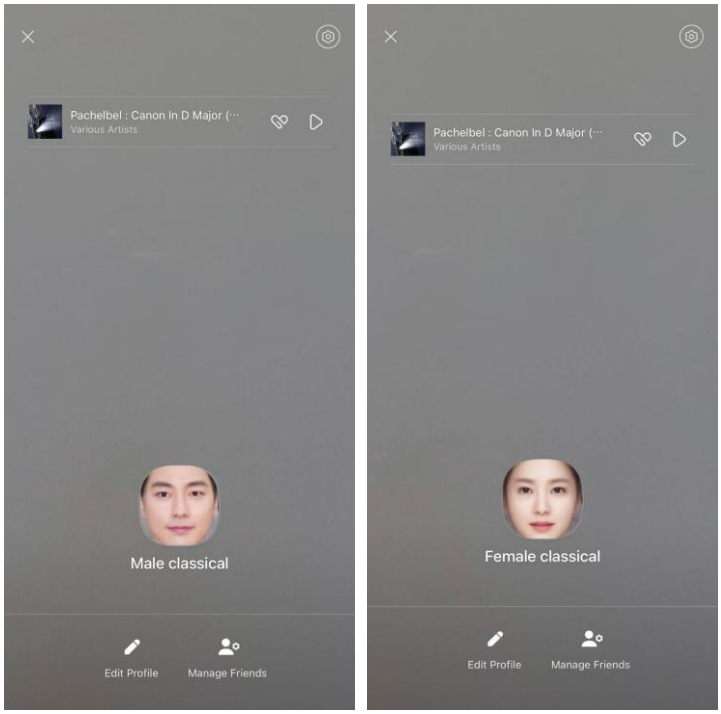

Figure 2. Male and Female Profile with Classical Background Music (Stimuli for the Rock Background Music Were Prepared Based on the Same Male and Female Profile)

2.4 Procedure

The participants were randomly assigned either a rock music or classical music group. The participants individually explored the profile page for 3 minutes and rated the subject on the MBTI personality scale. After completing the personality rating, they were debriefed.

3. Result

We analyzed the visitors' judgments of the profile owner's personality with Chi-square test. Based on the subcategories in the personality, each personality pair was separately analyzed. It was found that the male participants judged the owner's personality differently depending on the background music in sensing and intuition (X^2(1, N=24) = 10.97, $p < .01$) and judging and perceiving X^2(1, N=24) = 16.67, $p < .01$). Table 1 and 2 show their judgment in cross tabulation. Male participants judged a profile owner with classical background music more sensing and judging and with rock background music as more intuitive and perceiving.

Table 1. Music and Personality Judged by Male Participants (Sensing vs. Intuition)

		Sensing	Intuition	Total
Music	Classical	9	3	12

	Rock	1	11	12
Total		10	14	24

Table 2. Music and Personality Judged by Male Participants (Judging vs. Perceiving)

		Judging	Perceiving	Total
Music	Classical	11	1	12
	Rock	1	11	12
Total		12	12	24

A similar pattern was observed from the female participants, who also judged a profile owner with classical background music as more judging, and one with rock background music as more perceiving (Table 3), $X^2(1, N=20) = 7.21$, $p < .01$.

Table 3. Music and Personality Judged by Female Participants (Sensing vs. Intuition)

		Judging	Perceiving	Total
Music	Classical	6	3	9
	Rock	1	10	11
Total		7	13	20

Table 4 and 5 show the cross tabulation where the sex variable was collapsed. They showed the same pattern where the participants judged a profile owner with classical background music more sensing X^2 (1, N = 44) = 9.17, $p < .05$ than intuition and more judging X^2 (1, N = 44) = 23.36, $p < .01$ than perceiving.

Table 4. Music and Personality Sex Variable Collapsed (Sensing-Intuition)

		Personality		
		Sensing	Intuition	Total
Music	Classical	13	8	21

	Rock	4	19	23
Total		17	27	44

Table 5. Music and Personality Sex Variable Collapsed (Judging-Perceiving)

		Personality		
		Judging	Perceiving	Total
Music	Classical	17	4	21
	Rock	2	21	23
Total		19	25	44

Finally, in both male and female participants, there was no significant difference in music's influence on people's judgment of others' extroversion-introversion and thinking-feeling. The findings showed that background music had influence on people when they judged others' personalities.

4. Discussion

Although we did not see the different judgment pattern for all four personality pairs, it seems that background music on social media could influence people in judging others. People judged the owner of the profile with rock music as its background music as intuitive and perceiving, while judging the one with classical background music as sensing and judging. Interacting with others in the online environment has become an essential part of our lives. In this study, we showed that a different background music can give a different impression about the profile owner. People use SNS to express themselves and provide information that helps others to form a specific impression of their identities. In addition to what we learned from the previous studies that showed the impact of music on various parts in human life, this study showed that even background music on SNS could affect people when judging others. An SNS influences our judgment of people, and decision making when purchasing products.

Based on the results, it would be possible that people can strategically select a specific type of music and put it as background music to provide an intended impression to others, whether or not it is done with good or bad intentions. Although the findings have partially confirmed the previous studies in the sense that it showed the significant difference in judging others' personalities, this study still has a limitation. We used only two opposite genres of background music, hard rock and classical music to maximize participants' impression and judgment. However, even within the genres of hard rock and classical music, there is significant variety, and we are not sure if the music we selected could represent each genre in general. Also, our sample size could have been insufficient. There must be a sufficient

sample size to decrease the margin of error or the sampling error. We only had 44 participants in our sample, so it is not enough to identify a stronger impact of independent variable on dependent. As another limitation, it is possible that the participants were not able to answer some questions by solely relying on the background music, because participants had to make assumptions or make a guess to answer the questions. This aspect in the experiment could have made the test results less reliable. A future study under a more controlled setting and more participants will strengthen the results.

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