

Parasocial Bonding with K-pop Idols: Big Five Personality Trait Extraversion and the Role of Loneliness

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Abstract. K-pop culture has become widely spread around the world, where fans create this parasocial bond between them and their K-pop idol. The increased exposure to social media allows more and more people to create this bond with their favorite celebrity. However, why do some K-pop fans feel as if their favorite idol is a close friend, while others keep that bond at arm's length? This correlational, cross-sectional design explores whether individual differences in Extraversion predict the strength of parasocial bonds with idols and whether this relationship is linked by loneliness. Participants (18+ years old) in this study will complete three surveys: the Parasocial Interaction Scale, Big Five Inventory - Extraversion subscale, and UCLA Loneliness. Based on power analysis, with an expected effect size of $r \approx .10$, a minimum of 108 participants need to be recruited to achieve 90% power at $\alpha = .05$. It is hypothesized that higher Extraversion is expected to be stronger among those who report higher levels of loneliness. After analysis, expected results included a positive relationship between Extraversion and parasocial bond strength, and loneliness strengthening this association. In other words, more extraverted and lonelier individuals are predicted to report stronger parasocial bonds with their favorite idols. Overall, the results discovered from this research will deepen our understanding of how personality and loneliness level shape parasocial connections with K-pop idols in modern fandom culture.

Keywords: Extraversion, Parasocial Bonds, Loneliness, K-pop fandom, Personality

1. Introduction

In recent years, fan culture has rapidly expanded across the world, especially through the global influence of K-pop, uniting millions of people who share a deep emotional attachment to their favorite idols. Therefore, raising the question about the reason for so many people feeling such deep emotional connections to idols they may never meet in person. To define, these one-sided emotionally influential relationships are known as parasocial bonds that allow fans to experience closeness and emotional support from their favorite idols. This type of relationship can be very impactful to a person's identity, for example, becoming passionate about the same thing that idol likes. It can also provide strong emotional support to fans making this relationship meaningful to people. By understanding the mechanism behind this meaningful bond, it becomes clear how people adapt to the current digital world, where online media interactions increasingly replace face-to-face interactions, and develop other relationships and bonds, such as parasocial bonds with celebrities.

This study aims to improve our understanding of how personality traits, especially Extraversion, and social factors like loneliness influence the development and maintenance of parasocial relationships. By exploring these factors, this research examines how modern fandom functions as both a source of belonging and emotional fulfillment in the digital world we live in today.

2. Literature review

Usually, in our traditional understanding, social relationships involve direct interactions with close friends, family members, or partners. However, other than the common social relationships that involve face-to-face interactions, there are also another kind of social bond named parasocial relationships. Parasocial interaction was first used to describe a seemingly face-to-face relationship between a viewer and a performer in mass media, radio, television, and movies [1]. This relationship involves the forming of nonreciprocal socioemotional bonds with media figures like celebrities or influencers [2]. A related idea, the parasocial relationship, a longer-lasting bond between a media consumer and a performer, is also mentioned in the early work by Horton and Wohl. While parasocial interaction is limited to the moment of media exposure, parasocial relationships can persist over time, extending beyond any individual viewing episode [3]. Specifically, parasocial relationships are one-sided relationships that can feel emotionally meaningful, even though the celebrity is unaware of the individual's existence. Through social media platforms, parasocial relationships can positively influence well-being by providing a sense of connection, community and belonging. Furthermore, it can also help people deal with stress, support personal growth, and reduce prejudice by engaging with members of different groups, which can also further combat stereotypes [2].

A growing amount of research indicates that personality traits may be a significant factor in determining who develops stronger parasocial relationships. Specifically, Extraversion, which is a Big Five trait characterized by sociability, enthusiasm, and a desire for social engagement, has been linked to larger and more diverse social networks [4]. It was also found that Extraverted people tend to seek out interaction and connection, usually with friends and peers, which can also include the connection with celebrities and idols, extending their sense of social belonging through parasocial relationships. Moreover, studies have also shown that extraverts maintain larger and more diverse social networks in daily life. For example, in a study with young adults over a one-year period examined how personality traits influence the formation and maintenance of social relationships [5]. The results found that individuals high in Extraversion were more socially active, had a greater number of peer and romantic relationships, and initiated new social connections more frequently than introverted individuals. Also, extraverts would receive more emotional support from others compared to introverts, and were more likely to achieve increases in relationship satisfaction over time. From the results, it emphasizes that Extraversion increases behaviors that are directed toward a positive social and state, like making friends or cooperating. This makes extraverts more motivated and effective in forming and maintaining interpersonal relationships.

Extraverts are more likely to seek out and form a variety of social connections in everyday life, according to earlier research, so it makes sense that they would do the same in parasocial contexts, where socializing and forming bonds extend to idols and celebrities. More recently, a study examined the correlation between the Big Five personality traits and parasocial interactions among fans of the Korean Wave (Hallyu) [6]. They found that individuals high in Extraversion exhibited stronger parasocial interaction scores compared to those lower in Extraversion. The results suggest that extraverted people may be more likely to engage with and feel more connected to celebrities, because this social interaction satisfies their need for social belonging. Moreover, the study also

noted that introverted individuals, who contain opposite traits from extroverted individuals, may form parasocial connections for different reasons, such as emotional comfort or companionship, highlighting that parasocial bonds can serve multiple psychological functions across different personality types [6].

3. Present work

According to previous research, extraversion has long been associated with more frequent social engagement and forming more new relationships; however, little is known about how this personality trait is associated within the context of parasocial relationships, especially those that are involved in online fan communities. Additionally, one of the main causes of parasocial interaction has been found to be loneliness, which is described as an emotionally unpleasant experience when there is an imbalance between the interpersonal relationships one wishes to have and those one perceives they currently have, characterised by a perceived lack of meaningful social connections [7].

To address these gaps, this study will examine how personality and social factors together influence the formation and strength of parasocial bonds with K-pop idols. Specifically, it will focus on the personality trait of Extraversion and the social state of loneliness. Through exploring the interplay between personality and social state, this research aims to broaden our understanding of how individual differences in personality shape emotional connection and belonging within modern fandom culture. The current research also extends prior work by addressing not only who (extraverted individuals) are most likely to form parasocial bonds, but also under what social conditions (experiences of loneliness) these connections are most likely to occur.

The main question of this study is, Does loneliness moderate the association between extraversion and stronger parasocial ties with K-pop idols? By investigating the connection between extraversion and the strength of parasocial links with the reduction of loneliness, this study makes a substantial contribution to the body of literature. Most importantly, this study integrates media psychology and personality psychology by analyzing how personality traits like extraversion operate in parasocial contexts. It broadens our understanding of how personality functions in both direct social interaction and mediated, symbolic relationships, such as parasocial relationships. Additionally, by introducing loneliness as a potential moderator, individual differences in social fulfillment may either strengthen or weaken the relationship between extraversion and parasocial bond.

This study predicts that people with higher extraversion scores will have stronger parasocial ties to their favorite K-pop idols based on prior research. People who are extraverted are typically more sociable, energetic, and motivated to seek interpersonal connections, which may include parasocial ties with celebrities in addition to in-person relationships. These bonds may serve as another way for them to express their emotional commitment and sense of social belonging. Additionally, loneliness is expected to strengthen these parasocial connections. Individuals experiencing higher levels of loneliness are likely to form stronger emotional attachments to idols as a way to fulfill unmet social needs. Moreover, loneliness is predicted to moderate the relationship between Extraversion and parasocial bond strength, such that the positive association between Extraversion and parasocial connection will be strengthened among those who report higher loneliness. This suggests that extraverted yet socially unfulfilled individuals may form deeper emotional ties with their idols.

4. Method

We will report all measures, manipulations, and exclusions. This study will be approved by and carried out in accordance with the recommendations of the Institutional Review Board (IRB) for human participants. Written informed consent will be obtained from all participants prior to participation, and all procedures will comply with ethical standards for human subjects research.

Participants. Approximately 150 participants (aged 18 and older) will be recruited. Recruitment will take place both at the University of California, Santa Barbara (UCSB), through student clubs related to K-pop, and online, via social media platforms and fan communities dedicated to K-pop. Participants must be fluent in English and identify at least one favorite K-pop idol. Participants who are under 18 years old, fail attention checks, or display straight-line responses (e.g., identical ratings across items of the scale) will be excluded from analysis.

The main hypothesis examines the relationship between extraversion, a personality trait, and the degree of parasocial ties to K-pop idols. The software program G*Power is used to conduct a power analysis [8]. The results of a multiple linear regression showed that $N = 108$ is the minimum necessary sample size, assuming a small-to-medium effect size ($f^2 = .10$), at an alpha level (two-tailed) threshold of 5%, and statistical power of 90%. We plan to collect slightly more responses from about 150 participants in order to account for potential exclusions.

Study Design. This study uses a correlation, cross-sectional design to examine the moderating effect of loneliness and the relationship between extraversion and the strength of parasocial bonds with K-pop idols. The data and variables involved in the study will all be measured through online self-report questionnaires. There won't be any random assignment or experimental manipulation involved in the study. It is possible to test whether personality traits (extraversion) predict the strength of parasocial relationships and whether this relationship changes depending on the degree of loneliness.

Procedures. An informed consent form outlining the objectives, procedures, and participants' rights as research subjects will first be presented to the participants. Then, they will take the online survey after giving their consent. Before the survey, the participants will be asked to name their favorite K-pop idol, then respond to three standardized scales that measure loneliness, parasocial bond strength, and extraversion. After completing the three measures, the participants will then submit demographic data, including age, gender, ethnicity, nationality, and the approximate amount of time they spend each week interacting with K-pop-related content. The entire process will take approximately 10-15 minutes. Finally, a brief debriefing outlining the goal of the study and providing contact details for any follow-up queries or concerns will be given to participants.

Measure 1. Extraversion will be measured using the Big Five Inventory (BFI) [4]. The five traditional personality traits, extraversion, agreeableness, conscientiousness, neuroticism, and openness, can be effectively assessed using this 44-item BFI. Only the Extraversion subscale, which consists of eight items (such as "I see myself as someone who is talkative" and "I am full of energy"), will be used for this study. Each item is assessed on a 5-point Likert scale that goes from 1 (strongly disagree) to 5 (strongly agree). To prevent response bias, negatively worded items will be reverse-scored to ensure all high scores consistently reflect a high level of Extraversion. All the scores will be averaged with higher scores representing greater levels of sociability, assertiveness, and positive emotionality (more extroverted). The BFI's extraversion subscale has shown strong internal consistency across research, with Cronbach's α usually falling between 0.85 and 0.90.

Measure 2. The Parasocial Interaction Scale will be used to gauge how strong individuals' parasocial relationships are [9]. It is a 20-item self-report measure originally developed to assess the intensity of viewers' relationships with television personalities. Some items will be modified to

reflect participants' favorite K-pop idols (e.g., replacing "TV performer" with "idol"). On a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), participants will score statements such as "I see my favourite idol as a friend" or "I feel sorry when my idol experiences a setback." The mean scores will be calculated, where stronger parasocial ties will be indicated by higher mean scores. Multiple studies previously using this scale have reported high internal reliability ($\alpha \approx .90$) and strong validity across various studies.

Measure 3. The UCLA Loneliness Scale (Version 3), a popular 20-item tool that evaluates perceived social isolation and discontent with social connections, will be used to quantify the variable loneliness [10]. Participants will rate how frequently they feel lonely on a 4-point scale from 1 (never) to 4 (often). A sample statement includes, "I feel left out", and a reversed-scored item sample includes "There are people I can talk to." Items with both positive and negative wording will be appropriately gathered, and the mean score will be calculated, with higher scores indicating a greater feeling of loneliness. The UCLA Loneliness Scale has been extensively validated across diverse populations, showing strong internal consistency of α between 0.89 and 0.94.

Data Analytic Approach. For data analysis, a linear regression is used to test whether Extraversion predicts parasocial bond strength. Prior to hypothesis testing, any cases failing attention checks or displaying no variability in responses will be excluded before analysis. Extraversion will be used as the predictor and parasocial link strength as the outcome variable in a multiple linear regression to test the primary hypothesis [11]. Furthermore, for the moderating role of loneliness, both predictors will be mean-centered before creating an interaction term (Extraversion x Loneliness). Then, a second regression model including the interaction term will then be tested to examine the effect of loneliness as the moderator. A statistically significant interaction ($p < 0.05$) will show that the degree of loneliness among participants affects the strength of the association between extraversion and parasocial bond strength.

Exploratory analysis will also be examined using additional regression models for potential gender differences and the role of weekly K-pop engagement time on parasocial bond strength. 95% confidence intervals will be provided for each statistical test, and significance will be assessed at $\alpha = .05$ (two-tailed).

5. Results

Descriptive statistics. For each variable (extraversion, parasocial relationship strength, and loneliness), descriptive statistics including means, standard deviations, and ranges will be computed. All scales are expected to show high internal consistency (Cronbach's $\alpha \geq .85$).

Aim 1. We predict that Extraversion will be positively correlated with parasocial bond strength. Specifically, individuals who score higher in Extraversion are predicted to report stronger parasocial connections with their favorite K-pop idols compared to those who score lower in Extraversion. It reflects their greater tendency to seek social engagement and emotional expression. In the regression model, Extraversion is expected to be a significant predictor of parasocial bond strength, explaining a portion of the variance. See Figure 1 for the expected relationship between Extraversion and parasocial bond strength.

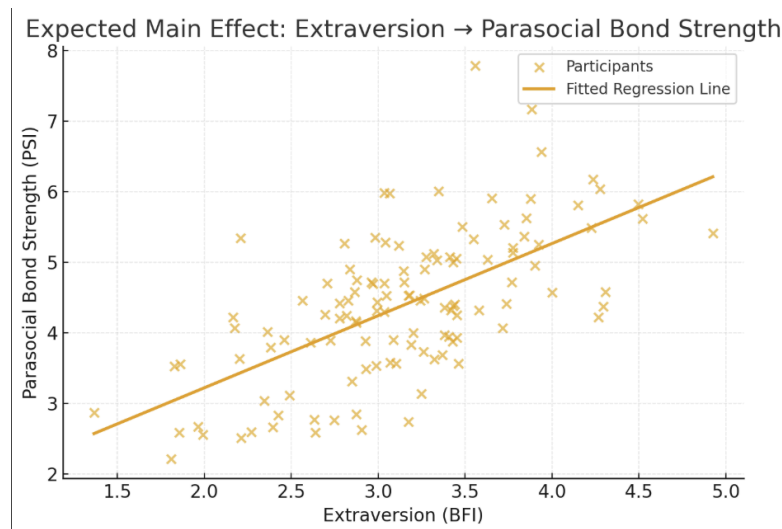


Figure 1. Expected a positive relationship between Extraversion and Parasocial Bond Strength

Note. The scatterplot shows the predicted main effect of extraversion on parasocial bond strength (PSI). Higher extraversion scores on the Big Five Inventory (BFI) are expected to be associated with stronger parasocial bonds with K-pop idols. The proposed linear trend is represented by the fitted regression line.

Aim 2. To analyze the moderation effect, loneliness is expected to interact with Extraversion in predicting parasocial bond strength. A significant Extraversion $\times$ Loneliness interaction is predicted ($p < 0.05$). The relationship between Extraversion and parasocial bond strength is expected to be stronger among participants with higher loneliness scores, since parasocial connections may serve as a meaningful function for socially unfulfilled individuals. Simple slope analyses will also illustrate that Extraversion is more strongly related to parasocial bond strength at high levels of loneliness (+1 SD) than at low levels (-1 SD) [11]. The expected moderating effect of loneliness on the association between extraversion and parasocial bond strengths is shown in Figure 2.

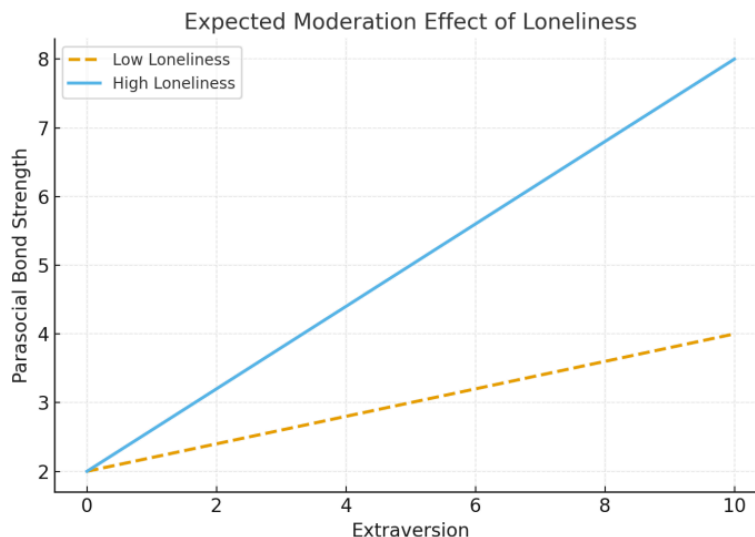


Figure 2. Expected moderator of the relationship between Extraversion and Parasocial Bond Strength by Loneliness

Note. The solid blue line represents participants with high loneliness, and the dashed orange line represents people with low loneliness. It is expected that those who report higher levels of loneliness will have a stronger positive correlation between

extraversion and parasocial bond strength, illustrating the hypothesized moderation effect.

Exploratory analysis will also be examined, including whether gender and weekly K-pop engagement predict parasocial bond strength. It is expected that female participants and those who report higher levels of weekly engagement will show slightly higher parasocial bond scores.

6. Conclusion

If the results meet my expectations, some important implications will be carried out. First, the role of Extraversion is expanded where a trait known to predict larger, more diverse real-life social networks also extends into parasocial bonds. This shows that extraverts do not only seek out friends, peers, and partners, but also use parasocial relationships with idols as another way of expanding their social orientation.

The role of loneliness is another implication. If the results show that loneliness strengthens the link between Extraversion and parasocial bonds, then this highlights that people may rely more on parasocial bonds to satisfy their needs for belonging when they experience social isolation. This is significant because in the increasingly digital, globalized world, lonely fans can feel intimately connected to media figures even if they may be thousands of miles away. Also, this signifies how crucial K-pop idols and celebrities are to their supporters.

In terms of generalizability, the findings will be generalized to K-pop fandoms where idols actively encourage closeness through livestreams, fan events, and direct online and offline interactions. However, other types of fandom, including sports fandom, influencer followings, or television characters, can also apply. Therefore, testing across different cultural and media contexts will help support how universal these effects are.

Of course, limitations also exist in this study. Since this is a correlational, cross-sectional study, we cannot determine causality, we can only investigate the correlation between the two. Also the reliance on self-report surveys introduces possible bias, like social desirability bias or participant bias. Last but not least, the sample focuses mostly on UCSB students and online K-pop fans, which may limit generalizability to broader populations.

In the future, designing longitudinal designs will be helpful to examine how parasocial relationships change over time and whether they have an impact on later well-being. Additionally, designing cross-cultural research could compare how these patterns are portrayed in East Asian and Western fandoms. It would be very useful in identifying the differences between the ways of East Asian and Western fandoms. Finally, to provide a more complete picture of how personality affects parasocial connection, researchers could expand beyond extraversion to other Big Five traits in the future.

In summary, this research will contribute to our understanding of the connection between personality, loneliness, and contemporary fandom culture, as well as the reasons why parasocial ties have become such a potent means of communication in the digital era.

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