Parasocial relationship as a predictor of viewers' willingness to sponsor virtual streamers

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Abstract: This study examines the growing V-Tuber phenomenon in Indonesia, focusing on the influence of parasocial relationships on viewers' intentions to donate during livestreams. A quantitative, non-experimental design was employed, using an online questionnaire to gather data from 812 Indonesian adults. The study measured variables using an adapted Experience of Parasocial Interaction Scale and an Intention to Donate Scale. Data were analysed using bivariate correlation and simple linear regression techniques. Findings revealed that parasocial relationships have a significant influence on viewers' donation intentions. This suggests that V-Tubers who actively build emotional connections with their audiences are more likely to receive financial support. The results provide valuable insights into the monetisation potential of V-Tuber content in Indonesia and highlight the importance of psychological engagement in fostering viewer loyalty and support. Overall, cultivating parasocial bonds may offer a strategic advantage for V-Tubers in expanding their economic sustainability.

Keywords: livestream donation; parasocial relationship; V-Tubers.

Introduction

The emergence of Virtual YouTubers (V-Tubers) began in 2016 with Kizuna AI, who creatively fused Japan's anime culture with the growing appeal of digital idols. Unlike conventional live-streamers, V-Tubers appear as animated 2D or 3D avatars, often using motion-tracking technology to mimic the gestures and expressions of their real-life counterparts. This innovative concept quickly captivated global audiences, particularly in East Asia, and soon spread across various streaming platforms beyond YouTube (Lu et al., 2021). In Indonesia, the V-Tuber phenomenon is gaining momentum, driven by the country's long-standing fascination with Japanese pop culture and the accessibility of online content. Recent studies have even highlighted the potential of V-Tubers in educational contexts, such as language learning and classroom engagement (Marsha, Warti, & Mulyaningsih, 2022; Saputra & Setyawan, 2021).

A key feature of the V-Tuber format is the anonymity it provides, allowing streamers to conceal their real identities and freely express aspects of themselves they might withhold in everyday life (Byron, 2023; Turner, 2023). Through digital avatars, V-Tubers can strategically craft personas that enhance their appeal and increase engagement (Liudmila, 2020). Research shows that most V-Tubers are female, as

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feminine attributes are often perceived as more approachable and engaging by audiences (Liu, 2022). Although traditional YouTube content may receive more immediate reactions, V-Tubers are frequently regarded as more visually and emotionally appealing (Kim & Yoo, 2021). The COVID-19 pandemic further accelerated the consumption of V-Tuber content, as lockdowns led many young adults to seek new forms of online entertainment. In China and Indonesia, V-Tuber livestreams became a coping mechanism during social isolation (Tan, 2023; Hapsari, 2023). However, this trend also underscored a potential psychological concern: the development of parasocial relationships, one-sided emotional bonds formed by viewers with media personas, which were found to correlate with increased feelings of loneliness.

Parasocial relationships, as defined by Dibble et al. (2015), involve a perceived sense of intimacy with a media figure despite the absence of real interaction. These relationships often intensify with prolonged exposure and personalized recognition (Stever, 2017). In the digital realm, this phenomenon extends to social media influencers, including V-Tubers, whose fans form connections based on sustained engagement and mediated interaction (Reynolds, 2022). Such bonds can also influence viewer behavior. On YouTube, features like comment sections, reaction buttons, and sharing options create a participatory environment that fosters emotional connection and community (Rihl & Wegener, 2017). Over time, these experiences may lead viewers to perceive content creators as socially or even physically attractive, reinforcing parasocial ties (Kurtin et al., 2018). Remarkably, even when audiences are fully aware of the fictional nature of V-Tuber avatars, meaningful attachments still form, as long as viewers perceive elements of relatability and maintain consistent exposure (Stein et al., 2022; Gannon, 2018; Bond, 2021).

Despite growing academic interest, research on V-Tubers remains limited, especially when compared to the broader livestreaming ecosystem. Prior studies have found that emotional connection and viewer satisfaction can drive financial support in the form of donations (Li & Peng, 2018; Wan et al., 2016; Yu et al., 2018). Yet, findings from Indonesia remain mixed: while Lontaan (2022) identified emotional attachment as a key motivator for donating on Twitch, Sun and Zulkarnaen (2023) reported no significant correlation. This inconsistency highlights the need for further investigation, particularly within the Indonesian context. To better understand this emerging phenomenon, this study explores how parasocial relationships may influence donation intention among Indonesian viewers of V-Tuber livestreams. The concept of Fan Instant Sponsorship (FIS), a term introduced by Lee et al. (2019), captures the practice of financially supporting content creators through spontaneous donations. On platforms like YouTube, this occurs through features such as Super Chat, where viewers can attach a paid message to ensure visibility during busy livestreams. As this feature becomes increasingly accessible in Indonesia, opportunities for local viewers and V-Tubers to engage in monetized interaction are expanding. Given the limited research on V-Tubers in Indonesia, this study aims to fill that gap by examining the influence of parasocial relationships on viewers' willingness to donate. Based on existing theories and empirical findings, the current research proposes the following hypothesis: Parasocial relationships positively affect Indonesian viewers' intention to donate to V-Tubers.

Method

Since this research borrows from one of Reynolds' (2022) adapted scales to measure parasocial relationship, the term parasocial relationship is defined as the unreciprocated attention from a viewer towards a V-Tuber, who is a form of social media figure. Regarding the dependent variable, donation intention applies to viewers who may have considered spending money on their favourite V-Tuber

through live chat donations (aka Super Chats), paid subscriptions, merchandise, or any exclusive content that is locked behind a paywall. This is distinct from donation behaviour, which refers to the act of actually spending money on the V-Tuber.

Participants were collected through a non-probability approach, and the sample for the research was determined by several inclusion criteria. As suggested by Rahman (2023), the nonprobability sampling method is most suitable for research designs that require a specific selection of participants in order to collect relevant data to achieve the objective of the study. The inclusion criteria for this research are as follows: those residing in Indonesia, adults aged 18-45, and frequent viewers of V-Tubers. From the 989 total respondents, the number of valid data was 812 after filtering out participants who did not fit the inclusion criteria. Gender-wise, 51.11% were female and 41.26% were male, while the remaining 7.64% did not disclose their gender. Respondents were asked to self-report their age range as a young adult (18-24 years old), an adult (25-34 years old), or an older adult (35-45). Most participants (70.20%) identified as young adults, 28.94% were adults, and 0.86% were older adults. The employment status demographic data showed that nearly half of them were students (49.01%), 25.37% were full-time workers, 9.61% were self-employed, and the rest were either part-time employees or unemployed (7.88% and 8.13% respectively).

This study mainly uses a quantitative research design and was approved by the Ethics Committee of the Faculty of Psychology, UGM. Respondents accessed and completed a questionnaire on Google Forms through a bit.ly link or QRIS code on the research's digital poster that was shared through social media platforms, including Discord, X.com (formerly Twitter), and WhatsApp. The questionnaire consists of 6 sections: introduction, informed consent, demographic data, parasocial relationship scale, donation behaviour items, donation intention scale, and closing statement.

After participants agreed to the informed consent, data collection began with demographic questions, followed by short-answer items that asked participants to state the name of their favourite V-Tuber and the type of content the V-Tuber creates. Additionally, participants are asked to estimate their weekly watch time on their favourite V-Tuber's content ("Less than an hour", "1-3 hours", "4-6 hours", "7-10 hours", "More than 10 hours"). Respondents who reported less than an hour of weekly watch time were disqualified from the study.

Parasocial relationship was measured using the Experience of Parasocial Interaction Scale (EPSI Scale), originally developed by Horton and Wohl (1956), and adapted by Reynolds (2022) to measure parasocial interactions with an online influencer, which would be V-Tubers in this case. The EPSI Scale has a Cronbach's alpha of 0.998, indicating a strong reliability, and it was constructed on a 7-point Likert scale from 1= "Not Agree at All" to 7= "Totally Agree". A higher score on the EPSI Scale suggests a stronger parasocial relationship that a viewer has towards the V-Tuber.

In the next section, donation behaviour questions were aimed towards participants who have spent their money on V-Tubers. Participants were asked to disclose the type of donation they made for the V-Tuber (Subscriptions, Super Chats, etc.), the frequency of their donations, the duration of their donation behaviour, and their average monthly spending on V-Tuber donations. Respondents with a mix of affirmative and negative responses in their donation behaviour were disqualified from the study due to the conflicting data.

For the following section, the Intention to Donate scale (Chou & Nguyen, 2023) was used to measure respondents' donation intention towards their favourite V-Tuber. It consisted of a 7-point Likert scale containing 4 items, ranging from 1= "Not Agree at All" to 7= "Totally Agree", with a Cronbach's alpha of .878. A higher score on the Intention to Donate scale suggests a higher donation intention that a viewer has towards the V-Tuber. Once the respondents have completed the questionnaire, they are sent to the closing statement section, where they are thanked for their time and participation.

Once the responses were collected, it was exported to a Google Sheets file in order to be analysed through the Jamovi (2023) program. Pearson's product-moment correlation coefficient (PMCC) - also known as bivariate analysis - was conducted between the results of the EPSI Scale and Intention to Donate scale to test the hypothesis. Afterwards, simple linear regression was conducted on the EPSI Scale and the Intention to Donate scale to measure the relationship between the variables.

Result

The results of the descriptive analyses, tests of assumptions, and hypothesis tests using simple linear regression are presented in the following section in Table 1.

Table 1

Descriptive Data

Variable	N	Min	Max	M	SD
Parasocial Relationship	812	6	42	22.9	9.05
Donation Intention	812	4	28	16.2	6.55

A majority of respondents fall under the category of having 1-3 hours for Weekly Watch Time (304 participants), 262 people reported having 4-6 hours of Weekly Watch Time, 136 people watch V-Tubers for 7-10 hours a week, and the remaining 110 people shared that they have over 10 hours of Weekly Watch Time, see Table 2.

Table 2

Average Weekly Watch Time

Group	Frequency	Percentage (%)
1-3 hours	304	37.44
4-6 hours	262	32.27
7-10 hours	136	16.75
More than 10 hours	110	13.55

Based on the categorization of the Parasocial Relationship variable in Table 3, most participants fall under the medium category (64.78%). Similarly, Table 4 shows that most of the participants (63.30%) fall under the medium category for the Donation Intention variable.

Table 3

Categorisation of Parasocial Relationship

Range	Category	Frequency	Percentage (%)
31.95<X	High	139	17.12
13.84≦X<31.95	Medium	526	64.78
X<13.85	Low	147	18.10

Table 4
Categorisation of Donation Intention

Range	Category	Frequency	Percentage (%)
22.75<X	High	161	19.83
9.65≦X<22.75	Medium	514	63.30
X<9.65	Low	137	16.87

Two tests of normality were conducted on the sample size of 812 respondents to examine whether the data collection meets the assumption that the results are normal. Shapiro-Wilk is the normality test that is appropriate for smaller sample sizes (Mishra et al., 2019), such as 50 or fewer, and the results here show that $p=0.000$ for both the Parasocial Relationship as well as the Donation Intention variables. Similarly, the Kolmogorov-Smirnov test, which is typically used for sample sizes over 50, shows that PSR is $p=0.001$ and Donation Intention is $p=0.000$. Either test indicated that the data is not normally distributed because $p<0.05$.

However, despite the results of these tests, it can still be considered that the normality assumptions are met, as supported by the Central Limit Theorem. Since the sample size of this study is much greater than 30, the following data analysis will use parametric tests instead of non-parametric, regardless of the results yielded (Koh & Ahad, 2020). Upon testing Pearson's product-moment correlation between the Parasocial Relationship variable to the Donation Intention variable, it was found that there is a moderately significant positive correlation, in which r (812) =0.386, p<0.001 (Table 5).

Table 5
Inter-correlation Matrix

	Parasocial Relationship	Donation Intention
Parasocial Relationship	1	
Donation Intention	0.386	1

Simple linear regression was applied to the data to explore whether the Parasocial Relationship can influence Donation Intention in the participants. The results of this testing, as shown in Table 6, indicate that $R^2 = 0.149$, F(142.0), p < 0.001, suggesting that the Parasocial relationship can explain 14.9% of the variance in donation intention, which exceeds the 5% threshold considered significant for simple linear regression (Chicco et al., 2021).

Table 6
Simple Linear Regression Analysis

Model	R	R²	Adjusted R²	F	df1	df2	p
			Overall Model Test				
1	0.386	0.149	0.148	142	1	810	< .001

Table 7
Model Coefficients - Donation Intention

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	9.845	0.5763	17.1	< .001	
Parasocial Relationship	0.280	0.0234	11.9	< .001	0.386

From the sample population, 609 participants reported that they have donated or are currently donating to V-Tubers. The remaining 203 stated that they have never donated money to V-Tubers. Most of those who have donated reported that they have been spending money on V-Tubers for over 6 months.

73 respondents stated that they had been sponsoring for 4-6 months, 91 respondents had been sponsoring V-Tubers for 2-3 months, 63 respondents stated that they had been sponsoring for 1-4 weeks, and the remaining 72 had been sponsoring for less than a week. Regarding the approximate amount that respondents spend on sponsoring V-Tubers per month, 373 reported that they spend 10,000 - 100,000 IDR a month, 135 reported that they spend 101,000 - 300,000 IDR a month, 42 respondents spend 301,000 - 500,000 IDR a month, and 59 stated that they spend over 500,000 IDR a month.

At the end of the questionnaire, participants may voluntarily provide reasons why they would be interested in donating to V-Tubers. Table 8 displays the most common reasons that were provided. A total of 491 respondents provided their reasons; 100 have not donated to a V-Tuber before, while the remaining 391 have donated previously. Some participants included multiple reasons in their answers; thus, there is an overlap in the reason frequencies. According to the results shown in Table 8, the most common reason to donate is to show support for the V-Tuber (62.32%), and the least common reason to donate is viewers wanting to access exclusive content and/or receive merchandise (2.04%).

Table 8
Reasons for Donating to V-Tubers

Reasons	I have spent money on V-Tubers before	I have NOT spent money on V-Tubers before	Total	Percentage (%)
I want to show support for the V-Tuber	243	63	306	62.32
I like the V-Tuber content	97	32	129	26.27
I want to receive attention or interact with the V-Tuber	35	7	42	8.55
I want to access exclusive content and/or receive merchandise	10	0	10	2.04
I want to donate during special events	45	9	54	11.00
V-Tubers deserve money because it's their career	51	17	68	13.85
I want to donate when I have money	10	2	12	2.44

Discussion

Regarding the main objective of this research, the hypothesis is supported as results show a significant correlation between parasocial relationship and donation intention in Indonesian viewers towards V-Tubers. This finding is congruent with the previous research that delved into fan sponsorship behaviours through livestreaming platforms (Gros et al, 2017; Wan et al, 2016), reasoning that viewers can be influenced to support content creators monetarily through a strong development of emotional attachment. As previously touched upon, emotional attachment may not be quite the same as a parasocial relationship, but they are both descriptive terms for the closeness one feels towards a figure or character. The parasocial relationship towards V-Tubers found in this study may be explained by how live feedback during livestreams could create the perception of personal interaction between the content creator and the viewers (Bond, 2021; Chou & Nguyen, 2022; Li & Peng, 2021). It's not surprising that viewers then feel

inclined to support their favourite V-Tubers by sending them a gift or donation online because they feel a sense of personal connection towards them.

However, this study interestingly contradicts the results of Sun and Zulkarnaen (2023), whose research concluded no significant correlation between emotional connection and gift-giving intention in livestreaming. There are a few possible explanations for the stark difference in these findings. Comparing the obvious differences, Sun and Zulkarnaen (2023) focused on human live-streamers rather than virtual, and their sample size consisted of 25 interviewees and 400 survey respondents from Batam. It is possible that their smaller sample size could have played a role in the contradictory results, and our study broadened the scope of representative data on the donation intention of the general population of Indonesian livestream viewers. However, another explanation for this may be related to the content creators instead of the viewers. Since viewers tend to develop a stronger emotional connection towards V-Tubers than human live-streamers (Stein et al, 2022), it could be suggested that donation intention is less significant towards regular live-streamers in Indonesia than towards V-Tubers.

It is worth noting that most of the respondents in this study fall under the medium category for both PSR and donation intention, meaning that the majority of our sample shows moderate intensity for either variable. Keeping in mind that most of our respondents were young adults aged 18-24, this age demographic in Indonesia tends to spend a lot of their time on the internet (Reinaldo & Sokang, 2016), even showing a stronger preference to interact socially online rather than in person. Implementing the use and gratification theory in this context, our study suggests that V-Tuber viewers in Indonesia develop parasocial relationships with V-Tubers to satiate their social needs. However, since most respondents reported that they spend an average of 1-3 hours per week on V-Tuber livestreams, this fairly low amount of time invested in V-Tuber content may explain the moderate intensity of the viewers' parasocial relationship, since prolonged exposure is linked to higher levels of parasocial relationship on YouTube (Kurtin et al., 2018).

Similarly, the average weekly watch time may also explain why viewers had a moderate intention to donate to their favourite V-Tuber. Our study appears to be aligned with Yu et al. (2018) and Lee et al. (2019), who found that livestream viewers have higher donation intention when more time is spent on livestreaming content. One possible explanation for why donation intention in Indonesian viewers remained at a moderate level may be due to the accessibility of V-Tuber content. Since viewers are able to consume V-Tuber livestreams on YouTube for free and donations are entirely voluntary, it is possible that viewers are satisfied enough with the content that they are able to access without needing to pay anything towards the V-Tuber, as suggested by Sun and Zulkarnaen (2023).

The result of the linear regression found between parasocial relationship and donation, while significant enough to confirm a positive relationship between the variables, suggests that other factors may be in play to affect the viewers' intention to donate to V-Tubers. For example, previous studies found that donation behaviour tends to be increased in livestreaming in conjunction with the perceived attractiveness of the content creator (Li & Peng, 2021; Li, 2023; Lu et al, 2022) and authentic self-disclosure (Lacap et al., 2023; Zhang, 2024) since viewers associate these features with reliability and trustworthiness. Other variables that may have some influence on the viewers' donation intention are revealed in our study's final item, where respondents share their motivations for donating to a V-Tuber. The most frequently mentioned reasons indicate that viewers intend to donate to support their favourite V-Tuber, which aligns with the findings of Lontaan (2022) and viewers enjoy the V-Tuber's content,

meaning their donation intention is influenced by entertainment value (Li & Peng, 2021; Lu et al, 2022). However, since these were not empirically measured, our study could not conclusively state the significance of these variables' impact on the viewers' donation intention.

In terms of actual donation behaviour, this study found that most respondents who have donated to V-Tubers tend to only do it occasionally and for a minimum amount at a time. However, most are also long-time spenders - donating for longer than 6 months. This suggests that, while V-Tuber viewers in Indonesia may not choose to donate frequently or give a large amount of money at a time, there is a sense of loyalty that compels viewers to keep donating to their favourite V-Tuber for an extended period. This appears to be an identical reflection of Lee, Choi, & Kim's (2019) findings, who reasoned that repeated donation behaviour is motivated by a viewer's affection for the content creator, but hindered by the viewer's ability to afford donations.

There are a few limitations in this study that require acknowledgement - the first is the design of the data collection, which relies on participants to self-report on the items of the questionnaire. This non-experimental approach tends to make it difficult to determine whether the results could be generalized due to the limited sample and potential bias in the interpreted data. However, this study did collect a sizable sample from the target population in order to minimize the possibility of inaccurate or unrepresentative data. Another limitation may be the language used for the data collection, which assumes that participants are proficient enough in English to complete the questionnaire, and there is a chance of misinterpretation of the items that were presented. Despite this, the assumption is reasonable due to the international nature of the V-Tuber community and how respondents are likely exposed to English-based content online. Regardless, this may be a consideration for future studies that may want to study parasocial relationships towards V-Tubers using scales that are more specific to the Indonesian experience.

Conclusions

Overall, this study contributes to the existing body of research on the link between online parasocial relationships and donation intention by offering new insights into the V-Tuber phenomenon within the Indonesian context. The findings strongly reinforce previous studies that suggest parasocial relationships positively influence viewers' willingness to donate during livestreams. Moreover, the results indicate that a significant and marketable audience exists among young adults in Indonesia. Therefore, fostering parasocial relationships may offer meaningful financial advantages for the V-Tuber industry in the region.

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