

The Impact of Content Strategy, Fan Interaction, Digital Platform Utilization, and Virtual Brand Image on Fan Engagement

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Abstract

This study aims to examine the influence of Content Strategy, Fan Interaction, Digital Platform Utilization, and Virtual Brand Image on Fan Engagement Levels among Virtual YouTuber fans in Tangerang City. The research employs a quantitative approach with a descriptive method. Data were collected using a structured questionnaire with a 5-point Likert scale, distributed to 100 respondents who are Virtual YouTuber fans and reside in Tangerang City. The sample was selected using purposive sampling based on specific criteria relevant to the research topic. Data processing and analysis were conducted using multiple linear regression analysis through IBM SPSS version 25. The results of the analysis indicate that all four independent variables simultaneously have a significant effect on Fan Engagement Levels. The Adjusted R Square value of 0.730 suggests that 73.0% of the variation in fan engagement levels can be explained by the combination of Content Strategy, Fan Interaction, Digital Platform Utilization, and Virtual Brand Image variables. Meanwhile, the remaining 27.0% is attributed to other factors not examined in this study, such as demographic characteristics, brand loyalty, visual content quality, and the intensity of online community activities. These findings provide practical contributions for content creators and Virtual YouTuber management in formulating effective strategies to increase fan engagement. Attention to the synergy between content, interaction, platforms, and virtual brand image is key to successfully building an active and loyal fan base. This study extends current VTuber engagement literature, which is still dominated by Japan and platform-based studies, by providing evidence from an emerging digital audience in Indonesia.

I. INTRODUCTION

The development of digital technology has drastically changed the face of the entertainment industry (Tamat, 2025) and the way people interact with content (Sulianta,

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2025). One phenomenon that has emerged is the Virtual YouTuber (VTuber), content creators who use digital avatars to communicate and perform on streaming platforms (Adileksono & Utari, 2024). In this era, content strategy has become a crucial aspect for the success of VTubers: they are required to develop engaging, relevant, and consistent content to capture the audience's attention while maintaining fan loyalty. VTuber content includes various forms, ranging from gaming, reaction videos, chat sessions (free chat), to educational content.

Interaction between VTubers and fans is also a crucial pillar in building a strong community. Through live chats, superchat features, and social media, VTubers can create parasocial bonds with their audience, strengthening engagement and emotional identification. Additionally, the strategic use of digital platforms helps expand reach (Alfiandi et al., 2024; Beata et al., 2023) and increase the visibility of VTubers. While YouTube remains the primary platform, many creators are also active on Twitch, Twitter, TikTok, Discord, and Instagram to broaden their interactions.

The virtual brand image of a VTuber plays a significant role in attracting and retaining fans. This image reflects how the audience perceives the character, including personality, content presentation style, and consistency of interaction. A strong and cohesive virtual character can distinguish itself from competitors and build a loyal and active fan base.

Although the popularity of VTubers continues to grow, research challenges still arise in understanding the factors that determine fan engagement levels. Engagement is not just about the number of viewers or subscribers, but also includes the quality of interactions, loyalty, and active participation within the community. Given this dynamic, this study is titled "An Analysis of the Influence of Content Strategy, Fan Interaction, Digital Platform Utilization, and Virtual Brand Image of YouTubers on Fan Engagement Levels in Tangerang City" to explore the internal variables that help us understand how VTubers build fan engagement in the context of Indonesia.

Recent studies in the literature also support this focus. For example, the study *What Motivates VTuber Viewership?* found that responsiveness and content activity influence emotional attachment and the attractiveness of VTubers to their audience (Chunterawong & Yang, 2025). Meanwhile, in the context of avatarization, the study *Entertainers Between Real and Virtual* highlights how dual identities (real-life persona and virtual character) shape a new form of audience engagement through the blend of realism and fantasy elements (Yin et al., 2025). Therefore, this study is expected to contribute empirical understanding of the determinants of VTuber engagement in the contextual setting of local fan communities in Indonesia.

Although several studies have explored the roles of content strategy and fan interaction in shaping fan engagement, none have fully integrated the concept of virtual brand image within the same model, particularly in the context of local Virtual YouTubers in Indonesia. Research focusing on VTubers has typically concentrated on either content strategy or fan interaction, without considering how the virtual brand image, which includes elements such as character consistency and personality, might contribute to fan engagement when combined with the other factors. This gap in the literature calls for a more holistic approach that includes all four variables content strategy, fan interaction, digital platform utilization, and virtual brand image simultaneously to better understand how they influence fan engagement levels in the local context of Indonesian VTubers.

In response to this urgency, this study aims to analyze the extent to which Content Strategy, Fan Interaction, Digital Platform Utilization, and Virtual Brand Image simultaneously and partially influence the Fan Engagement Levels of Virtual YouTubers in Tangerang City. This study also aims to make a theoretical contribution to the literature on digital marketing and consumer behavior in the context of virtual entertainment, as well as a practical contribution for VTubers, digital content managers, and creative industry professionals in designing effective, data-driven communication strategies.

II. RELATED WORKS/LITERATURE REVIEW

The research conducted by Yumna & Amalia (2023) emphasizes that content marketing is essentially a form of persuasive communication directed at consumers, aiming to introduce products and build long-term relationships between brands and audiences. Meanwhile, based on the research by Pandrianto & Sukendro (2018) which cites J. Rowley's view, content marketing is defined as a form of strategic management that focuses on the process of identifying information needs accurately through in-depth analysis, in order to attract the attention of potential customers through the distribution of relevant and valuable content, especially via digital media.

The research conducted by Prihastuti & Handoyo (2014) explains that interaction is a dynamic process in which an individual's thinking ability is developed and expressed. In this context, all forms of interaction are viewed as a means to filter and sharpen cognitive capacity, particularly in two-way communication that encourages reflection and deeper understanding. Meanwhile, in the study by Kim et al. (2023), fan interaction is defined as the ability of fans to engage directly or indirectly with celebrity figures through digital community platforms. Such interaction strengthens parasocial relationships, which are perceived as real connections between fans and public figures, including Virtual YouTubers, through features such as comments, live chats, or community-based exclusive content.

The research conducted by Awaluddin (2023) in his article titled "The Impact of Digitalization in the Society 4.0 Era on Employee Performance Management" defines digital platforms as a collection of computer-based technologies capable of replacing human labor and manual processes with computerized systems that can be read by machines. This definition emphasizes the ability of digital platforms to automate workflows and enhance operational efficiency through system digitization. Meanwhile, according to the study by Prastika & Kurniadi (2023) in their article "The Role of Digital Platforms in Enhancing Business Connectivity in the Digital Economy Era", digital platforms are described as virtual spaces or facilities that enable individuals and organizations to meet, exchange information, trade, and offer goods and services. This research highlights the central role of digital platforms as connectors between various economic actors, allowing activities to be carried out in an integrated digital system that is interconnected.

The research conducted by Hazain & Cokki (2024) states that virtual influencers are not real humans, but they are capable of building a positive brand image and making product placement more acceptable to consumers. This emphasizes that the presence of virtual influencers in digital marketing strategies not only serves as entertainment media but also as an effective instrument in enhancing brand perception in the eyes of consumers. Meanwhile, the study by Ülker-demirel & Yıldız (2021), shows that consumer attitudes

toward actors and characters in films or TV series significantly influence attitudes toward the film itself, the effectiveness of product placement, and brand perception. This finding strengthens the argument that virtual characters, including virtual influencers, can play a similar role to real actors in shaping consumer preferences through emotional and cognitive associations that arise from parasocial interactions.

The research conducted by Choiri & Ariescy (2024) states that good engagement on social media encompasses various forms of interaction, such as responding to comments, sharing relevant content, and utilizing social media features to listen to and respond to consumer needs and desires. This finding emphasizes that effective engagement is not only determined by the frequency of interactions but also by the quality of responses that help build a more personal relationship between the brand or public figure and the audience. Furthermore, the research by Chahal & Rani (2017), states that in strong social media engagement, there is a high level of trust from users toward the communicators, whether individuals, brands, or organizations. This indicates that social media engagement is not just a technical interaction activity but also involves a psychological dimension of trust, which ultimately contributes to loyalty and the sustainability of relationships with consumers.

Based on previous studies, it can be concluded that each variable investigated plays a significant role in influencing audience engagement. However, research that simultaneously integrates all four variables in the context of Virtual YouTubers in Indonesia remains limited. Content strategy has been proven to play a vital role as both a persuasive and managerial tool for building long-term relationships with the audience. In the context of VTubers, this content strategy becomes even more crucial, as virtual characters require strong narratives and consistency to maintain fan engagement. Furthermore, interaction plays a cognitive and emotional role in strengthening the parasocial relationship between fans and virtual public figures, forming the foundation of emotional attachment with the audience. On the other hand, digital platforms are not just distribution media but also essential infrastructure that enables connectivity, efficiency, and the expansion of interaction reach. A virtual brand image can shape consumer perception similarly to real figures through emotional associations that arise from parasocial interactions. Quality engagement is determined not only by the frequency of interactions but also by the quality of responses and the trust of the audience, which contributes to loyalty. Therefore, this study is crucial to comprehensively analyze the impact of content strategy, fan interaction, digital platform utilization, and virtual brand image on fan engagement levels of VTubers, particularly in the local Indonesian context, which has yet to be empirically explored.

III. METHODS

This study aims to deeply examine how content strategy, fan interaction, the use of digital platforms, and the virtual brand image of YouTubers influence fan engagement levels in Tangerang City. This objective arises from the need to understand the dynamics that shape fan engagement in the increasingly complex digital entertainment ecosystem, particularly concerning the Virtual YouTuber phenomenon, which has become a global and local trend. By focusing on these four key variables, this research seeks to provide a more

comprehensive overview of the factors that can enhance fan loyalty, participation, and emotional bonds with virtual figures.

To achieve the research objectives, a quantitative approach using multiple linear regression analysis is employed (Herijawati et al., 2023; Oktari & Yanti, 2022). This approach is used to analyze the relationship between the independent variables content strategy, fan interaction, digital platform utilization, and virtual brand image on fan engagement levels. Data collection was conducted through a questionnaire distributed to 100 respondents, who are VTuber fans residing in Tangerang City. At this stage, the researcher also describes the characteristics of the respondents and the research context in Tangerang City to provide a clearer understanding of the dynamics of fan engagement with VTubers.

Meanwhile, the quantitative approach is used to process the numerical data obtained from the questionnaires distributed to the respondents (Hildawati et al., 2024). Statistical analysis techniques, specifically multiple linear regression, are employed to examine the relationship between the independent variables (content strategy, fan interaction, digital platform utilization, and virtual brand image) and the dependent variable, which is fan engagement levels. Through this analysis, the study aims to measure the contribution of each variable to fan engagement and how they influence it when tested simultaneously. Thus, the quantitative approach not only enables the processing of data in numerical form but also provides a strong empirical basis for drawing objective conclusions and generalizations in the local context.

With the combination of both approaches, this study is expected to provide results that are more valid, reliable, and academically accountable. The findings will not only enrich the academic literature in the fields of digital marketing, communication, and consumer behavior but also have practical implications for content creators, digital managers, and the creative industry who wish to optimize strategies in building a loyal and active VTuber fanbase.

This study focuses on the phenomenon of Virtual YouTubers (VTubers), which has rapidly grown in recent years as part of the global digital entertainment industry (Putra, 2023), and on the fan engagement levels that have become a key factor in sustaining the existence and popularity of VTubers. The VTuber phenomenon marks a shift in entertainment consumption patterns (Alamanda et al., 2025), where public figures no longer need to be real individuals but can be embodied in the form of personalized digital avatars. The presence of VTubers offers a new way for audiences to connect with entertainment content through a combination of unique virtual characters, real-time interaction, and immersive experiences mediated by digital technology.

This study specifically focuses on the analysis of four key variables that are believed to influence fan engagement levels. First, the content strategy used by VTubers, which includes how content is organized, packaged, and presented to be relevant, engaging, and consistent in meeting the audience's needs. Second, fan interaction, which involves the dynamics of two-way communication, whether through live chats, comments, or special features such as superchat, allowing fans to feel a closer connection with the VTuber while strengthening emotional bonds. Third, the use of online platforms, which not only includes the utilization of YouTube as the primary medium but also cross-platform strategies such as TikTok, Instagram, Twitch, or Discord, aimed at expanding reach, increasing visibility, and supporting the formation of a solid fan community. Fourth, the VTuber's brand image,

which represents the virtual identity, including personality, character consistency, communication style, and the quality of digital appearance, all of which help build a positive perception in the eyes of the audience and differentiate the VTuber from competitors.

By examining these four variables, the study aims not only to determine the extent to which each factor contributes to fan engagement but also how the synergy between these factors can create an effective strategy to maintain loyalty and foster sustained interaction. The focus on the local context, specifically Tangerang City, also adds an important dimension, as it highlights how the global VTuber phenomenon adapts and is received within the socio-cultural environment of Indonesia. Therefore, this study is expected to contribute theoretically to the fields of digital marketing and consumer behavior, as well as provide practical insights for creative industry practitioners in designing evidence-based communication strategies.

In this study, the researcher uses two types of data from various sources, namely primary and secondary data (Silaban & Ivanna, 2024). Both types of data were selected to complement each other, allowing the information obtained to be richer, more accurate, and capable of providing a comprehensive overview of the research topic, which focuses on content strategy, fan interaction, digital platform usage, and the virtual brand image of YouTubers in relation to fan engagement levels in Tangerang City.

Primary data refers to information obtained directly from the main sources, namely the respondents who are actively involved in the phenomenon being studied. This data was collected through the distribution of questionnaires to 100 VTuber fans residing in Tangerang City, selected based on specific criteria using purposive sampling. Through primary data, the researcher can obtain actual and original answers regarding the experiences, perceptions, and levels of fan engagement with VTubers. The characteristics of primary data are contextual, current, and relevant to the research focus, as it is obtained directly from individuals who are part of the target population.

Meanwhile, secondary data refers to data obtained by the researcher from sources that are already available. This data can include previous research findings, academic articles, industry reports, official publications, reference books, and digital documentation related to the VTuber phenomenon or digital marketing issues in general. The use of secondary data allows the researcher to strengthen the theoretical framework, compare research results with previous findings, and place this study within a broader academic and practical context. Secondary data also helps to explain global trends regarding VTubers, the development of digital technology, as well as content-based marketing practices and interactions across various online platforms.

By combining primary and secondary data, this study is built on a stronger foundation. Primary data provides empirical information from the field, depicting the real conditions of VTuber fans in Tangerang City, while secondary data serves as a reference and comparison to strengthen the validity and reliability of the research. This approach ensures that the analysis results are not only descriptive but also grounded in a clear theoretical framework, with practical relevance that can be implemented in content management and fan engagement strategies for VTubers.

In this study, the target population consists of Virtual YouTuber (VTuber) fans and the VTubers themselves, with a focus on individuals residing in Tangerang City. However, due to limitations in time, resources, and the need to maintain the relevance of the research, the

study narrows the population to VTuber fans. From this population, the researcher selects a sample of 100 fans, chosen based on specific criteria using purposive sampling. The criteria include, for example, being an active fan who follows VTuber activities, interacts with their content, and resides within the study area. This sampling method is expected to provide a more representative picture of the experiences and levels of engagement of fans with the VTuber phenomenon.

According to experts in methodology, the population is defined as the entire set of objects or subjects in a study that possess certain characteristics relevant to the research problem. Sugiyono emphasizes that the population includes all elements targeted by the study, whether they are people, objects, events, or phenomena, while a sample is a smaller portion of the population selected in a specific manner to represent the overall characteristics of the population. In other words, the sample serves as a representation used by the researcher to conduct the study more efficiently without having to reach every member of the population.

In the context of this study, the use of a sample of 100 respondents is considered sufficient to provide a general overview of the fan engagement levels of VTubers in Tangerang City. This sample size meets the minimum standard commonly used in quantitative research based on regression analysis, ensuring that the results can be scientifically accountable (Subhaktiyasa, 2024). Moreover, by using a sample, the researcher can focus more effectively on processing and analyzing the collected data, ensuring that the research results remain valid, reliable, and relevant to address the research questions. Thus, the concepts of population and sample form an important foundation in this study, as both ensure that the results obtained are not only partial but also capable of representing the target population more broadly.

In this multiple linear regression analysis, several important assumptions need to be met to ensure the validity of the analysis results. First, normality is tested to ensure that the residual distribution follows a normal distribution. This is crucial to ensure that the regression parameter estimates are unbiased and that the statistical inferences generated are reliable. Normality is tested using the Kolmogorov-Smirnov test and the P-P plot distribution to verify that the residual data is normally distributed.

Second, multicollinearity is tested to ensure that there is no high correlation between the predictor variables, which could undermine the validity of the regression model. This test is conducted by calculating the Variance Inflation Factor (VIF), where a VIF value greater than 10 indicates significant multicollinearity. In this study, the VIF values for each predictor variable are expected to fall within an acceptable range, ensuring that there are no multicollinearity issues that would affect the accuracy of the model.

Third, heteroscedasticity is tested to ensure that the residual variance is homogenous and does not change with the predictor values. This test is performed using the Glejser test and residual scatter plots to verify that no patterns exist that would indicate heteroscedasticity in the data. Given that the sample size used in this study consists of 100 respondents with four predictor variables, testing these regression assumptions is crucial to ensure that the regression model is valid and provides accurate estimates and reliable results.

The data collection techniques in this study are an important step taken by the researcher to obtain relevant information that aligns with the research needs. Data in this study can be collected through several methods, including observation, interviews, and

questionnaires, or even a combination of all three if necessary to strengthen the validity of the results (Pasaribu & Kusnawan, 2022). The observation method is carried out by directly observing behaviors or events related to the research object. To make the observation more effective, the researcher supplements it with an observation sheet containing specific items, which serves as an instrument for describing the observed phenomenon. Additionally, interviews are also used as a data collection method, particularly when the researcher wants to gain a deeper understanding of the research problem from a limited number of respondents. This interview process is based on the personal reports of the respondents, as well as the knowledge and beliefs of the researcher, providing more qualitative and exploratory data. Meanwhile, the questionnaire method is chosen as the primary technique in this study due to its efficiency. The questionnaire involves providing a set of written questions or statements to respondents to be answered independently. This technique is effective because the researcher clearly understands the variables to be measured and can anticipate the expected responses from the respondents. By using these three techniques, either separately or in combination, the study is expected to generate complete, accurate data that supports a comprehensive analysis.

IV. RESULTS AND DISCUSSION

The coefficient of determination analysis is conducted to determine the extent to which the independent variables, consisting of Total_Strategy, Total_Interaction, Total_Platform, and Total_Brand Image, can explain the variation in the dependent variable, Total_Engagement. An R Square value of 0.734 indicates that the regression model can explain 73.4% of the variation in the dependent variable, while the remaining 26.6% is influenced by factors outside the model. Additionally, the Adjusted R Square value of 0.722 confirms the stability of the model after adjusting for the number of predictors. The F Change test result with a significance value of 0.014 (< 0.05) indicates that, overall, the independent variables have a significant effect on the dependent variable.

In this study, the multicollinearity test was conducted to ensure that there is no excessive correlation between the predictor variables, which could affect the validity of the multiple linear regression model. This is important considering that the four constructs used in the model content strategy, fan interaction, digital platform utilization, and virtual brand image are conceptually related and may have a high degree of overlap, particularly between content strategy and platform utilization. To test for multicollinearity, the Variance Inflation Factor (VIF) was calculated for each predictor variable.

The test results show that all VIF values for the four variables are below the accepted threshold (i.e., less than 10), indicating that there are no significant multicollinearity issues in this regression model. This means that each construct provides a unique contribution to the model, and there are no disturbing correlations between predictors that could undermine the regression parameter estimates.

Table 1 Coefficient of Determination Table

Model Summary ^e									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change

1	0.857 ^d	0.734	0.722	2.835	0.017	6.243	1	95	0.014
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Note: Predictors: (Constant), Total_Strategy, Total_Interaction, Total_Platform, Total_Brand Image, Dependent Variable: Total_Engagement.

In Table 1 above, it can be seen that the Adjusted R Square value is the Coefficient of Determination, which indicates the extent to which the regression model formed by the relationship between the independent variables (X1, X2, X3, X4) and the dependent variable (Y) influences the outcome. The obtained Coefficient of Determination value is 72.2%, which leads to the conclusion that the Content Strategy variable (X1), Fan Interaction variable (X2), Digital Platform Utilization variable (X3), and Virtual Brand Image variable (X4) contribute 72.2% to the Fan Engagement Level variable (Y). The remaining 27.8% (100% - 72.2%) is influenced by other factors outside the model.

Although the regression model used in this study successfully explained 72.2% of the variation in fan engagement levels, 27.8% of the variation remains unexplained by the four independent variables analyzed content strategy, fan interaction, digital platform utilization, and virtual brand image. This unexplained variance suggests that other factors, not included in the model, may influence fan engagement levels. Some variables that might contribute to this variation include the strength of parasocial relationships, which measures the emotional bond between VTubers and their fans. Fandom identity could also play an important role, given how fans identify with specific communities or brands, which could enhance their engagement. Additionally, donation intention, or the intent to provide financial support through donations (such as superchat features), might also influence fan engagement levels. Finally, perceived authenticity, or the perception of VTubers as authentic virtual characters, may play a crucial role in determining whether fans feel authentically connected to the VTuber. Future research could consider these variables to provide a more comprehensive understanding of the factors influencing fan engagement in the context of VTubers.

T-test (Partial Test)

The results of the T-test for each independent variable (X) against the dependent variable (Y) are shown below. The decision-making criterion depends on comparing the calculated t-value (Thitung) with the t-table value (Ttabel). If Thitung is greater than Ttabel, then Ha is accepted and H0 is rejected. If Thitung is lower than Ttabel, then Ha is rejected and H0 is accepted. The formula $(n - k)$ is used to calculate the level of potential error. With a sample size of 100 and 4 variables, the Ttabel value is 1.984.

Table 2 Coefficient

Model	Variabel Independen	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1	(Constant)	4.994	2.946	-	1.695	0.093
	Total_Strategi Konten	0.871	0.075	0.762	11.647	0.000
2	(Constant)	0.743	2.706	-	0.275	0.784
	Total_Interaksi Penggemar	0.398	0.073	0.401	5.447	0.000
3	(Constant)	-1.202	2.615	-	-0.460	0.647
	Total_Platform Digital	0.230	0.065	0.255	3.556	0.001
4	(Constant)	-1.445	2.548	-	-0.567	0.572
	Total_Citra Merek Virtual	0.206	0.082	0.210	2.499	0.014

Note: Predictors: (Constant), Total_Strategy, Total_Interaction, Total_Platform, Total_Brand Image.

Based on the regression analysis results shown in the Coefficients table, all four independent variables have a significant impact on the dependent variable, Total_Engagement, although with varying levels of contribution. The Total_Content_Strategy variable shows the most dominant influence with a beta coefficient of 0.762 and a significance level of 0.000, meaning content strategy plays a major role in enhancing the engagement level. Next, the Total_Fan_Interaction variable also makes a significant contribution with a beta coefficient of 0.401 (Sig. 0.000), emphasizing the importance of audience interaction in strengthening performance. The Total_Digital_Platform variable has a positive influence with a beta coefficient of 0.255 and a significance value of 0.001, indicating that the use of digital platforms plays a role in supporting the improvement of engagement levels. Meanwhile, the Total_Virtual_Brand_Image variable has a positive but relatively smaller impact, with a beta coefficient of 0.210 and a significance level of 0.014. Overall, the results show that content strategy is the main factor driving improvement, followed by fan interaction, digital platform utilization, and virtual brand image. These findings imply that comprehensive digital strategy management, focusing on content, interaction, and brand image enhancement, can significantly boost engagement as measured by the dependent variable.

F-test (Simultaneous Test)

Table 3 Anova

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2104.021	4	526.005	65.439	0.000 ^e
	Residual	763.619	95	8.038		
	Total	2867.64	99			

Note: Predictors: (Constant), Total_Strategy, Total_Interaction, Total_Platform, Total_Brand Image.

The results of the ANOVA test show that the regression model used in this study is suitable for explaining the relationship between the independent variables (Total_Content_Strategy, Total_Fan_Interaction, Total_Digital_Platform, and Total_Virtual_Brand_Image) and the dependent variable, Total_Engagement. The calculated F-value of 65.439 with a significance level of 0.000 (< 0.05) indicates that, simultaneously, the four independent variables have a significant impact on the dependent variable. This means that the regression model can statistically explain the variation in the dependent variable, and this result is not due to chance. Therefore, this regression model is deemed valid for hypothesis testing and strengthens the previous findings, which suggest that the combination of content strategy, fan interaction, digital platform utilization, and virtual brand image significantly contributes to the enhancement of engagement levels.

V. CONCLUSIONS

The results of this study empirically confirm that, in the context of Virtual YouTubers (VTubers), content strategy is more determinant than the breadth of platform utilization. While the use of multiple platforms such as YouTube, TikTok, and Instagram certainly

helps expand reach, it is the quality of the content strategy how well it engages the audience and sustains interest that ultimately drives higher levels of fan engagement. Specifically, the content that resonates with fans, whether through gaming, interaction, or personality, plays a more significant role in cultivating loyal and active fanbases. This finding underscores the importance for VTubers to prioritize the development of engaging and consistent content over simply increasing the number of platforms they utilize.

Furthermore, the study highlights the importance of fan interaction, digital platform utilization, and virtual brand image in fostering fan engagement. Active interaction with fans, particularly through live chats and personalized engagement on digital platforms, is a key factor in building emotional connections and strengthening the community around a VTuber. Additionally, a strong and consistent virtual brand image contributes to positive perceptions among fans, ultimately encouraging greater participation and interaction with the content. The results emphasize the need for VTubers to manage these digital marketing factors in an integrated manner to ensure sustained fan loyalty and engagement.

However, there are several limitations to this study. The sample was limited to fans residing in Tangerang City, which may not fully represent the broader VTuber fanbase across Indonesia or internationally. Additionally, the data collected was self-reported, which can introduce bias and inaccuracies in understanding actual fan engagement behavior. Another limitation is that the study does not differentiate between different types of VTubers, such as independent VTubers versus those affiliated with agencies, which may have distinct strategies and fan dynamics. Future research could expand the sample size and explore these differences to provide a more comprehensive understanding of fan engagement in the VTuber ecosystem.

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