

BEYOND FUNCTIONALITY: WHY BRAND ASSOCIATION OUTWEIGHS PERCEIVED QUALITY IN FOSTERING LOYALTY TO AI CHATBOTS

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ABSTRACT

This study investigates the influence of Brand Association and Perceived Quality on the loyalty of ChatGPT users among Master of Communication Studies students at Mercu Buana University. With ChatGPT holding a 59.5% market share in the AI chatbot sector, understanding the drivers of user loyalty is crucial. Despite its widespread use, limited studies have simultaneously explored how brand perception and quality affect loyalty, especially among student users. Using a quantitative survey method, data were collected from 63 students via a Likert-scale questionnaire and analysed using statistical tools such as normality tests, correlation analysis, multiple linear regression, t-tests, and F-tests. The findings reveal that Brand Association has a significant positive effect on user loyalty, indicating that students who strongly identify with ChatGPT's brand are more likely to remain loyal users. In contrast, Perceived Quality alone does not significantly influence loyalty, suggesting that favourable service assessments are insufficient to guarantee continued use. However, when combined, Brand Association and Perceived Quality jointly influence user loyalty, highlighting the synergistic value of brand image and service quality. Among the two variables, Brand Association emerged as the more dominant factor. The study underscores the importance of branding strategies in strengthening user loyalty to AI-based platforms.

Keywords: *Brand Association; Perceived Quality; Brand Loyalty, ChatGPT*

1. INTRODUCTION

At the beginning of the 2020s, Artificial Intelligence (AI) brought about a revolution in the world of the internet. The most prominent participants in the application and software industry throughout the world have been taken aback by the introduction of OpenAI's Chat GPT in the year 2022. As if not wanting to fall behind, Alphabet, the parent company of Google, released an artificial intelligence application called Gemini. Microsoft-Bing released a product called Copilot. Meta, the parent company of Facebook, Instagram, and Whatsapp, released the MetaAI application. Finally, the most recent and unexpected release was DeepSeek, an artificial intelligence application made by High-Flyer, a Chinese company.

The utilization of AI by students is unavoidable. Students utilize AI to compose articles, assist in completing assignments, and generate innovative

concepts for school tasks. Daniel Ginting (2024) reports, 60% of students using AI to assist with college assignments, with 70% of these users being women[1], [2].

Chat GPT is the most widely utilized AI chatbot of those now available. The 2023 Populix study indicates that 52% of Indonesians utilize ChatGPT in their daily activities, followed by Copy. AI [3].

The findings are consistent with the results of a global survey. In the battle for the AI Chatbot market, various rival companies, notably ChatGPT, dominate with 59.5% market share, followed by Microsoft Copilot 14.6%, Google Gemini 13.8%, Perplexity 5.3%, Claude AI 2.5%, Brave Leo 1.4%, Komo 0.7%, Andi 0.7%, and You.com 0.5%. As reflected in market share statistics, ChatGPT is widely favored among academics. Created by OpenAI, it operates like other AI chatbots to fulfill various communication and information retrieval

requirements. Not only do ChatGPT users dominate, but they are also relatively loyal. The market share of ChatGPT users is expected to stabilize above 70% within a few months in 2024. The 70% number is derived from the integration of ChatGPT and Microsoft Copilot, which utilizes the ChatGPT foundation as the core large language model. This number indicates that users exhibit loyalty to the service they perceive [4].

Luthfiyyah et al. (2024) perceives the application of Artificial Intelligence as prevalent in academia; yet, he asserts that further research is necessary. Market share data indicates that ChatGPT is a preferred platform within academic circles. Developed by OpenAI, it operates similarly to other chatbots to support diverse communication and information retrieval needs. In this context, Luthfiyyah et al. assert that generative AI tools like ChatGPT have the capacity to transform learning methodologies by assisting users with essay preparation, idea comprehension, and writing organization. Nevertheless, the generated output requires rigorous evaluation, verification, and validation prior to use..[5]

Huallpa (2023) indicated that the academic utilization of AI among college students, via systems and chatbots, is anticipated to rise in the forthcoming years, as several reports recognize substantial prospective benefits [6]. This estimate is corroborated by a survey of students done by Yilmaz et al. (2023). The survey results indicate that the perceived utility, perceived simplicity of use, and behavioural intention to utilize ChatGPT exceed 50% among students[7]

A fundamental component of brand equity in an AI interface such as ChatGPT is user trust. Choudhury and Shamszare's research highlights that trust, algorithm quality, and privacy significantly impact customers' adoption of AI chatbot services for health-related goals, equating these elements with brand value [8]. This viewpoint is further substantiated by Wang et al., who demonstrated that trust enhances user experience and elevates brand equity through parasocial relationships with brands [9].

The notion of consumer experience is essential in the cultivation of brand equity for AI products. Huy et al. highlighted that comprehending the exact actions users undertake when engaging with ChatGPT might aid brands in aligning their services with consumer expectations, thereby preserving brand value[10]. Research by Foroughi et al. demonstrates that ChatGPT enhances customers'

buying experiences through individualized responses that foster interaction, resulting in heightened brand loyalty [11]. The interplay between the advantages of AI services and consumer participation not only enhances user delight but also substantially strengthens brand equity.

This study will evaluate the relationship between brand association, perceived quality of the ChatGPT brand, and user loyalty. Brand association encompasses all the thoughts and perceptions that consumers have when they encounter a brand. This may include features, beliefs, events, symbols, or emotions linked to the brand [12],[13], [14], [15]. Meanwhile, perceived quality refers to a consumer's subjective opinion of the quality of a product or service, which is based on perception rather than factual facts. Perceived quality is frequently influenced by brand associations, price, previous experience, consumer reviews, or product packaging (Ismi et al., 2019,Romaniuk & Nenycz-Thiel, 2013).

The formulation of this research problem is as follows, based on the aforementioned description:

RQ1: To what extent does brand association affect Chat GPT user loyalty among students?

RQ2. To what extent does perceived quality influence Chat GPT user loyalty among students?

RQ3.What is the simultaneous impact of Brand Association and Perceived Quality on Chat GPT User Loyalty among Students?

RQ4.Which factor exerts a greater influence on the loyalty of Chat GPT users among students: Brand Association or Perceived Quality?

2. LITERATURE REVIEW

2.1 Brand Loyalty

Brand loyalty is a multifaceted concept encompassing various dimensions of consumer behaviour. It is typically characterized by a customer's commitment to repurchase a brand consistently over time, driven by a combination of behavioural and attitudinal factors. This synthesis explores the determinants of brand loyalty, its implications for brand performance, and the various models proposed to understand this phenomenon.

Behavioural brand loyalty reflects a customer's repeated purchasing behaviour, indicating a straightforward commitment to a particular brand due to satisfaction or habit. Chaudhuri and Holbrook [18] emphasize that behavioural loyalty reflects

purchase patterns, while attitudinal loyalty includes emotional ties and commitments to a brand. Kuikka and Laukkanen (2012), further clarify that attitudinal loyalty is influenced by several antecedents, including brand satisfaction and brand trust, which ultimately lead to loyalty [19]. This distinction between behavioural and attitudinal loyalty is crucial, as it informs marketers about the different strategies needed to foster loyalty. For instance, enhancing emotional connections (attitudinal loyalty) can complement strategies aimed at ensuring repeat purchases (behavioural loyalty).

Customer satisfaction emerges as a vital contributor to brand loyalty. Research shows that satisfied customers are more likely to develop strong attachments to brands, which translate into repeat purchasing behaviour. Ahmed et al. (2014) highlight that customer loyalty is significantly shaped by the dynamic interplay between service quality, brand trust, and customer satisfaction. [20]. Various studies, including those of Back and Parks, 2003, highlight the importance of customer satisfaction as a precursor to loyalty, reinforcing the notion that when customers perceive high service quality, their likelihood of remaining loyal to the brand increases.

Moreover, marketing communication strategies significantly influence brand loyalty. In this regard, Oluwafemi and Adebisi (2018) demonstrate that integrated marketing communications (IMC) enhance customer loyalty by shaping effective communication strategies that align with consumer expectations in competitive markets [21]. This aligns with insights from Murtiasih et al. (2021), who suggest that consistent and trustworthy brand performance through reliable marketing can lead to increased loyalty [22]. The role of ethical marketing practices, as highlighted by Aprilia and Warganegara (2024), illustrates how responsible branding can positively influence customer relationships and, by extension, brand loyalty [23].

From a theoretical standpoint, numerous models attempt to capture the complexity of brand loyalty. The dual aspects of loyalty—attitudinal and behavioural—are frequently integrated into models that predict consumer behaviour across different contexts. For instance, behavioural dimensions of brand loyalty were examined by Yeboah-Asiamah et al (2016), emphasizing the sequential stages of attitudinal loyalty [24]. Another notable model proposed by Back and Parks (2003) considers cognitive, affective, and conative aspects of loyalty, providing a comprehensive approach to evaluating

how consumers engage with brands emotionally and behaviourally [25].

Furthermore, the impact of brand trust on loyalty has gained attention in recent literature. Brand trust, defined as the confidence customers have in a brand's reliability, is a significant component influencing both behavioural and attitudinal loyalty—reinforcing the idea that brands must consistently meet customer expectations to foster long-term loyalty (Ahmed et al., 2014; Murtiasih et al., 2021).

Brand loyalty, traditionally characterized by a customer's commitment to repurchase a brand, is a well-established construct in marketing literature (Chaudhuri & Holbrook, 2001)[18]. The distinction between behavioural loyalty (repeat purchases) and attitudinal loyalty (emotional attachment) is crucial, with research consistently highlighting key antecedents such as customer satisfaction, brand trust, and effective marketing communication (Ahmed et al., 2014; Oluwafemi & Adebisi, 2018)[20,21].

However, the digital transformation, particularly the advent of AI-driven services, challenges the direct application of these traditional models. While studies like those of Yeboah-Asiamah et al. (2016) and Back and Parks (2003) provide robust models for cognitive and affective loyalty, they were developed in contexts of tangible goods or human-delivered services [24,25]. The question remains whether these same drivers hold equal weight in the context of non-human, intelligent agents like AI chatbots, where the "service encounter" is algorithmically generated and the relationship is parasocial (Wang et al., 2025)[9]. This gap necessitates a re-examination of loyalty drivers in the AI domain.

2.2 Brand Associations

Brand associations play an integral role in shaping consumer perceptions and influencing purchasing behaviour across various markets. At its core, brand associations encompass the thoughts, feelings, and images that consumers link to a specific brand, functioning as both a mental shortcut for identification and a means of product differentiation and positioning in competitive landscapes. This multifaceted construct is critical for conveying the unique selling propositions of products, especially in sectors like organic goods, where consumers are increasingly discerning about quality and sustainability. Mawadati et al. assert that effective brand associations positioned around

natural, healthy, and environmentally friendly attributes significantly contribute to the purchase of organic products, underscoring how strategic marketing communications can bolster brand equity in this niche[26].

Additionally, research indicates that brand awareness is a precursor to strong brand associations, which in turn influence consumer loyalty and the acceptance of the brand in market contexts. Rios and Riquelme highlight a hierarchical relationship in which increased brand awareness enhances consumer associations, fostering greater brand loyalty [27]. This is substantiated by Zhao et al., who found that advertisements significantly improve brand awareness, which mediates the relationship between consumer loyalty and brand competition in the marketplace[28]. These insights are further echoed by Grigaliūnaitė and Pilelienė, who confirm that effective brand positioning and the development of positive associations directly elevate consumer purchase intentions, particularly for organic products [29].

Moreover, the cognitive judgments consumers make regarding brand attributes signify the weight of brand associations in driving purchase behaviour. Koçak and Ruzgar emphasize that the modern marketing landscape has evolved from merely focusing on functional attributes to embracing experiential dimensions that strengthen these associations[30]. This shift reflects a deeper interaction between consumers and brands, wherein emotional connections fostered through positive brand associations enhance brand loyalty and stimulate repeat purchases[31].

A critical limitation of this existing body of work is its primary focus on associations tied to physical product attributes or corporate image. In the realm of AI chatbots, brand associations are likely to be more abstract and experiential. Users may associate a chatbot like ChatGPT with "empowerment," "efficiency," "academic integrity," or even "dependency," rather than with traditional functional features. While Gorin et al. (2022) have begun exploring the neural correlates of brand associations, their application to the complex, interactive nature of AI brands is still nascent. Therefore, it is unclear which specific associations are most potent in fostering loyalty to an AI service, creating a clear need for empirical investigation in this specific context..

2.3 Perceived Quality

Perceived quality is a fundamental concept influencing consumer behaviour, particularly in purchasing decisions. It represents the consumer's subjective evaluation of a product's overall excellence, which encompasses both intrinsic and extrinsic attributes of the product. Research consistently indicates that perceived quality positively correlates with purchase intentions and consumer trust across various contexts, including retail and online shopping environments. Studies show that perceived product quality has a significantly positive effect on perceived trust in online shopping, reinforcing the importance of perceived quality in influencing purchase decisions [32], [33]

A key finding in the literature is the role of extrinsic cues such as price, brand name, and store reputation in shaping perceived quality. These cues enhance consumer evaluations by serving as indicators of product value, ultimately affecting purchase behaviour [34], [35]. For instance, Tsotsou emphasizes the importance of marketing strategies that accentuate product attributes to enhance perceived quality, which can be manipulated through external cues (Tsotsou, 2005). Furthermore, the interplay between perceived quality and customer loyalty has been substantiated, indicating that a strong perception of quality can lead to heightened customer loyalty and satisfaction [36], [37].

The complexity of perceived quality is also highlighted in different service contexts where the relationship between perceived service quality and perceived value is critical. Studies reveal that high perceived service quality enhances consumer satisfaction, serving as a precursor to loyalty [38], [39]. Additionally, perceived quality is associated with mitigating perceived risks, which reinforces consumer trust and, consequently, their willingness to repurchase [40], [41]

A crucial critique emerges when applying this to subscription-free, platform-based AI services. For products with a direct monetary cost, perceived quality is a key differentiator. However, for a free-tier service like ChatGPT, quality may function as a "threshold variable" (Teas & Agarwal, 2000)—a basic expectation that must be met to avoid dissatisfaction, but not necessarily a primary driver of loyalty once that threshold is crossed. Users might expect a baseline level of accuracy and speed; beyond that, their continued loyalty may be swayed by other factors, such as brand identity or ecosystem integration. This potential shift in the role of

perceived quality from a primary driver to a secondary factor in the AI chatbot landscape is a central gap that this study seeks to address.

3. METHODOLOGY

This study employs a quantitative methodology that utilize a survey data collection technique. This method is a research methodology that involves the collection of data from a large number of respondents using a structured instrument (questionnaire) to measure variables that have been systematically determined. This method is designed to produce a comprehensive or generalized understanding of social phenomena by utilizing numerical data that has been statistically analyzed [42].

This study comprises a population of 63 students. The research sample employs total sampling, a technique in which all individuals from the population that satisfy the requirements are utilized as research samples. This indicates that the quantity of samples is equivalent to the population size. This strategy is employed when the population size is rather modest and may be comprehensively studied.

To assess the normally distributed data, the researcher employed a normality test. This test seeks to determine if the examined data follows a normal distribution. This is significant because several statistical approaches, such t-tests and regression analysis, presume that the data be normally distributed for the conclusions to be accurate. The formula is as follows[43]:

$$X^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

The researcher applies correlation coefficient analysis to assess the relationship between two variables and ascertain the strength and direction of that association. Correlation allows us to determine if a variable increases alongside others (positive correlation), declines as others increase (negative correlation), or exhibits no meaningful link (zero correlation). Multiple linear regression analysis was utilized by the researcher in order to ascertain the nature of the connection that exists between the variables that were dependent and those that were independent. A multiple linear regression analysis is performed with the intention of determining the importance of the effect of predictor factors on

dependent variables. This is done in order to ensure that the analysis has the appropriate prediction, which may be determined by using the following formula: $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$. [44]

The researcher takes the T test and the F test for hypothesis testing. The T test quantifies the effect of each independent variable on the dependent variables individually. The decision-making criterion involves comparing the significance value [45]. If the significance value is below the predetermined level of 0.05 ($\alpha = 5\%$), the hypothesis is accepted or rejected based on the following criteria: Based on the comparison between the calculated t-value (t_{count}) and the critical t-table value (t_{table}):

- If the calculated value of t exceeds the table value, then the free variable influences Y, the bound variable.
- If the calculated value of t is less than the t value from the table, then the free variable does not influence Y (the bound variable).

The statistical testing of F is conducted to determine whether the independent variables included in the model collectively influence the dependent variables. The test was performed at a significance level of 0.05 ($\alpha = 5\%$). Hypothesis testing decision rules comparing the calculated F-statistic with the critical F-table value are defined as follows:

- If the calculated value of F exceeds the F value from the table, the free variable concurrently influences the bound variable.
2. If the value of F is calculated to be less than F in the table, then the free variable has no simultaneous effect on the bound variable.

The hypotheses of this study are as follows:

H1: Brand association significantly influences the loyalty of ChatGPT users among students.

H2: Perceived quality significantly influences the loyalty of ChatGPT users among students.

H3: Brand association and perceived quality jointly have a significant influence on the loyalty of ChatGPT users among students.

H4: There is a significant difference in the relative influence of brand association and perceived quality on the loyalty of ChatGPT users among students.

4. RESULT AND DISCUSSION

The respondents comprise 63 postgraduate students in communication science at Mercu Buana University, including 36 women and 27 males. All of them are avid users of Chat GPT to assist with completing their college tasks. They have utilized Chat GPT for over two years, thereby mastering nearly all functions accessible in the platform.

4.1 Normality Test

Graphical plot analysis has significant limitations, particularly because the number of observations can influence the visualization and interpretation of the plots. Therefore, a more objective statistical test is required to ensure the normality assumption is met. One such statistical method is the non-parametric Kolmogorov-Smirnov test. If the Asymp. Sig. value is greater than 0.05, the data can be considered normally distributed.

Table 1. Kolmogorov-Smirnov Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		63
Normal Parameters	Mean	0.0000000
	Std. Deviation	7.41737337
Most Extreme Differences	Absolute	0.087
	Positive	0.059
	Negative	-0.087
Test Statistic		0.087
Asymp. Sig. (2-tailed)		.200
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Table 1 presents the results of the Kolmogorov-Smirnov normality test on the regression model's residuals (unstandardized residuals). With a sample size of 63, the test produced an Asymp. Sig. value of

0.200, which is greater than the 0.05 significance level. This indicates that the regression residuals are normally distributed. Therefore, the classical linear regression assumption of residual normality is fulfilled, and the regression model is considered valid for parameter estimation and hypothesis testing.

Table 2. Partial Kolmogorov-Smirnov Normality Test

One-Sample Kolmogorov-Smirnov Test				
		Brand Association (X1)	Perceived Quality (X2)	User Loyalty (Y)
N		63	63	63
Normal Parameter	Mean	26.24	31.52	38.56
	Std. Deviation	5.825	9.442	12.313
Most Extreme Difference	Absolute	0.098	0.104	0.101
	Positive	0.067	0.082	0.080
	Negative	-0.098	-0.104	-0.101
Test Statistic		0.098	0.104	0.101
Asymp. Sig. (2-tailed)		.200	.085	.177
a. Test distribution is Normal.				
b. Calculated from data.				
c. Lilliefors Significance Correction.				
d. This is a lower bound of the true significance.				

Furthermore, Table 2 presents the Kolmogorov-Smirnov test results conducted individually for each variable: Brand Association (X1), Perceived Quality (X2), and User Loyalty (Y). This partial normality test is carried out to ensure that each variable follows a normal distribution before proceeding to regression analysis. This step helps avoid potential bias and determines whether data transformation

(e.g., logarithmic transformation or using non-parametric methods) is necessary.

The partial normality test results indicate that:

1. Brand Association (X1) has an Asymp. Sig. value of 0.200 (> 0.05), indicating a normal distribution.
2. Perceived Quality (X2) has an Asymp. Sig. value of 0.085 (> 0.05), also indicating a normal distribution.
3. User Loyalty (Y) has an Asymp. Sig. value of 0.177 (> 0.05), which suggests that this variable is also normally distributed.

Based on these results, all variables in the study meet the normality assumption, allowing the use of linear regression analysis without requiring further data transformation.

4.2 Coefficient Correlation

Table 3 Coefficient Correlation

Correlations		Brand Association (X1)	Perceived Quality (X2)	User Loyalty (Y)
Brand Association (X1)	Pearson Correlation	1	.500**	.797**
	Sig. (2-tailed)		.000	.000
	N	63	63	63
Perceived Quality (X2)	Pearson Correlation	.500**	1	.433**
	Sig. (2-tailed)	.000		.000
	N	63	63	63
User Loyalty (Y)	Pearson Correlation	.797**	.433**	1
	Sig. (2-tailed)	.000	.000	
	N	63	63	63

** . Correlation is significant at the 0.01 level (2-tailed).

Correlation Analysis between Brand Association, Perceived Quality, and User Loyalty

Based on the correlation analysis presented in Table 3, the relationships between the variables in this study can be described in detail as follows:

1. The Relationship between Brand Association (X1) and User Loyalty (Y)

The correlation coefficient of 0.797 indicates a strong positive relationship between Brand Association (X1) and User Loyalty (Y). Based on Sugiyono's classification, this value falls within the high correlation category (0.60–0.799). The positive

sign of the correlation implies that the stronger the brand association perceived by students toward ChatGPT, the higher their loyalty in using the platform. The significance value (Sig.) of 0.000, which is less than 0.01 ($p < 0.01$), indicates that this relationship is statistically significant. Therefore, it can be concluded that Brand Association (X1) plays a crucial role in enhancing user loyalty (Y). This finding highlights the importance of brand-related strategies in establishing a strong and favorable brand image in the minds of users.

2. The Relationship between Perceived Quality (X2) and User Loyalty (Y)

The correlation coefficient of 0.433 indicates a moderate positive relationship between Perceived Quality (X2) and User Loyalty (Y), based on Sugiyono's categorization (0.40 – 0.599) [46]. This positive correlation suggests that the higher the perceived quality of ChatGPT among students, the higher their loyalty as users. However, this coefficient is notably lower than the correlation between Brand Association (X1) and User Loyalty (Y), implying that the influence of Perceived Quality (X2) on user loyalty is not as strong as that of Brand Association (X1). Nevertheless, the relationship remains significant and should not be overlooked in efforts to foster user loyalty.

The correlation results demonstrate that Brand Association (X1) has a stronger and more significant relationship with User Loyalty (Y) compared to Perceived Quality (X2). This finding provides strategic implications: in order to increase user loyalty toward ChatGPT among university students, it is essential for the company to focus primarily on strengthening Brand Association. This can be achieved through consistent branding campaigns, strategic positioning, and building symbolic value that resonates with users. Although Perceived Quality (X2) shows a weaker correlation, it remains an important factor. Continuous efforts to ensure and improve the quality of ChatGPT services are still relevant and valuable in shaping positive user perceptions, which in turn contribute to long-term loyalty.

4.3 Multiple Linear Regression Analysis

Table 4 Multivariate Linear Regression Analysis

Coefficients				
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	-6.279	4.578		-1.372	.175
	Brand Association (X1)	1.636	.190	.774	.621	.000
	Perceived Quality (X2)	.060	.117	.046	.515	.609
a. Dependent Variable: User Loyalty (Y)						

Based on the results of the multiple linear regression analysis presented in Table 3, it is evident that the variables Brand Association (X_1) and Perceived Quality (X_2) simultaneously influence User Loyalty (Y). The regression model obtained from the analysis is as follows: $Y = -6.279 + 1.636X_1 + 0.060X_2$. The interpretation of the regression equation is as follows:

1. The constant (intercept) of -6.279 indicates that if the values of Brand Association (X_1) and Perceived Quality (X_2) are both zero, the predicted value of User Loyalty (Y) would be -6.279. This negative value implies that, theoretically, in the absence of brand association and perceived quality, user loyalty tends to be very low or even negative.
2. The regression coefficient for Brand Association (X_1) is 1.636, suggesting that for every one-unit increase in Brand Association, assuming other variables remain constant, User Loyalty increases by 1.636 units. This indicates that Brand Association has a strong and positive influence on user loyalty.
3. The regression coefficient for Perceived Quality (X_2) is 0.060, meaning that a one-unit increase in Perceived Quality, while holding other variables constant, results in an increase of only 0.060 units in User Loyalty. Although the effect is positive, its impact on user loyalty is relatively small compared to that of Brand Association.

The regression model suggests that Brand Association contributes more significantly to User Loyalty than Perceived Quality.

4.4 Hypothesis Test

The researcher employed two types of hypotheses testing to determine whether there is a significant relationship between the variables under study: the t -test and the F -test.

The t -test is used to assess the extent to which each independent variable individually influences the dependent variable. The decision-making criteria in the t -test involve comparing the significance value (p -value) to a predetermined significance level ($\alpha = 0.05$), as well as comparing the t -calculated value to the t -table value (Arna, 2019:108).

There are two main approaches for interpreting the t -test results:

1. Based on the comparison of t -calculated and t -table values:
 - If t -calculated $>$ t -table, the independent variable has a significant effect on the dependent variable.
 - If t -calculated $<$ t -table, the independent variable does not have a significant effect on the dependent variable.
2. Based on the significance value (Sig.) from SPSS output:
 - If Sig. $<$ 0.05, the independent variable has a significant effect on the dependent variable.
 - If Sig. $>$ 0.05, the independent variable does not have a significant effect on the dependent variable.

Table 5 : t test Table

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.279	4.578		-1.372	0.175
	Brand Association (X1)	1.636	0.190	0.774	8.621	0.000
	Perceived Quality (X2)	0.060	0.117	0.046	0.515	0.609
a. Dependent Variable: User Loyalty (Y)						

Based on the analysis results, the variable Brand Association (X_1) has a t -calculated value of 8.621, which is greater than the t -table value of 2.000. Additionally, the significance value is 0.000, which

is below the 0.05 threshold. Therefore, the null hypothesis (H_0), stating that Brand Association has no effect on User Loyalty (Y), is rejected. Conversely, the alternative hypothesis (H_1), which states that Brand Association (X_1) has a significant effect on User Loyalty, is accepted. This indicates that the stronger the brand association of ChatGPT in students' minds, the higher their loyalty to using the service.

In contrast, the variable Perceived Quality (X_2) has a t -calculated value of 0.515, which is less than the t -table value of 2.000, and a significance value of 0.609, which exceeds 0.05. Consequently, the null hypothesis (H_0), stating that Perceived Quality does not influence User Loyalty, is accepted. Meanwhile, the alternative hypothesis (H_2), which posits that Perceived Quality significantly affects User Loyalty, is rejected. In other words, even though students may perceive the quality of ChatGPT's services as good or bad, this factor alone is not strong enough to significantly influence their loyalty to using the platform.

The F-test is conducted to determine whether the independent variables included in the regression model have a simultaneous effect on the dependent variable. This test is performed using a significance level (α) of 0.05 or 5%.

The decision criteria for the F-test are as follows:

1. If the F-calculated > F-table, the independent variables simultaneously have a statistically significant effect on the dependent variable.
2. If the F-calculated < F-table, the independent variables do not simultaneously have a statistically significant effect on the dependent variable.
3. If the significance value (Sig.) < 0.05, there is a statistically significant effect of all independent variables on the dependent variable.
4. If the significance value (Sig.) > 0.05, there is no statistically significant effect of all independent variables on the dependent variable.

Table 6 F-Test Table

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5988.475	2	2994.238	52.668	.000
	Residual	3411.081	60	56.851		
	Total	9399.556	62			
a. Dependent Variable: User Loyalty (Y)						
b. Predictors: (Constant), Perceived Quality (X2), Brand Association (X1)						

Based on Table 4, the F-calculated value is 52.668, which is greater than the F-table value of 3.15. This indicates that the regression model is statistically significant. Moreover, the significance value of 0.000 is less than 0.05, suggesting that the regression model is significant at the 95% confidence level ($\alpha = 0.05$).

Therefore, the null hypothesis (H_0), which states that there is no effect of Brand Association (X_1) and Perceived Quality (X_2) on User Loyalty (Y), is rejected. In other words, there is a significant simultaneous effect of the independent variables on the dependent variable, and the alternative hypothesis (H_3) is accepted.

In addition, the Sum of Squares for Regression is 5988.475, which is greater than the Sum of Squares for Residual at 3411.081. This indicates that a substantial portion of the variation in User Loyalty can be explained by the independent variables included in the model.

5. DISCUSSION

The findings of this study provide valuable insights into the dynamics of user loyalty in the context of AI-based platforms, particularly ChatGPT. The central conclusion that brand association significantly and dominantly influences user loyalty, while perceived quality does not, offers several theoretical and practical implications. These results resonate with and diverge from existing literature in important ways.

The positive and strong correlation between brand association (X_1) and user loyalty (Y) ($r = 0.797$, $p < 0.001$) reveals that users who have a strong mental and emotional connection with the ChatGPT brand tend to be more loyal. This supports

previous research by Romaniuk & Nenycz-Thiel (2013), who argue that strong brand associations enhance behavioural loyalty by creating mental structures that encourage repeated use. Similarly, Gorin et al. (2022) found that neural responses to brand associations (e.g., logos, names, visual identity) are linked to consumer preference and attachment.

This result is further echoed in the context of AI platforms by Wang et al. (2025), who noted that parasocial interactions with AI brands such as ChatGPT could deepen user engagement and loyalty. In the current study, students who use ChatGPT extensively are likely to have developed symbolic associations—viewing the tool not just as software, but as a trustworthy academic assistant or even a ‘digital companion’. These associations appear to carry more weight than simple perceptions of functionality or service quality.

Moreover, the regression analysis confirms that brand association has the most substantial influence on loyalty, with a standardized beta coefficient of $\beta = 0.774$, far outweighing perceived quality. This aligns with Chaudhuri & Holbrook (2001), who distinguished between attitudinal and behavioural loyalty, suggesting that emotional and symbolic ties—components often fostered by brand association—are key to ensuring long-term user engagement.

In contrast, perceived quality (X_2) had only a moderate correlation ($r = 0.433$) with user loyalty and was not statistically significant in the regression model ($\beta = 0.046$, $p = 0.609$). This outcome may appear surprising at first glance, given that perceived quality has often been shown to be a strong antecedent of customer satisfaction and loyalty (Beneke et al., 2013; Anwar & Andrean, 2021). However, its limited role in this study suggests several possible interpretations.

First, perceived quality may act as a “threshold variable”—as Teas & Agarwal (2000) noted—whereby a basic level of service performance must be met to avoid dissatisfaction, but beyond that, quality alone does not drive loyalty. For instance, students may take for granted ChatGPT’s responsiveness, accuracy, and convenience, seeing these as standard expectations rather than differentiators. What truly distinguishes the brand in their minds is its association with innovation, relevance, or academic empowerment—elements that go beyond objective performance.

Second, this finding is consistent with research in digital and AI service contexts. For example, Foroughi et al. (2025) found that personalization and user-brand interaction quality (which align more with brand association than objective quality) were more predictive of loyalty than basic service functions. Similarly, Huy et al. (2024) emphasized that users of generative AI tools base their loyalty not solely on performance but also on perceived alignment with their values, needs, and identity as digital learners.

Nevertheless, it would be misleading to completely disregard the role of perceived quality. The moderate correlation found in this study suggests that it plays a supportive role, possibly strengthening or weakening the effects of brand association. This aligns with findings by Caruana et al. (2000), who suggested that quality perceptions often operate indirectly through satisfaction and trust pathways. Future studies may benefit from exploring mediating or moderating variables that could clarify how quality perceptions contribute to or amplify loyalty outcomes.

Despite the weaker individual influence of perceived quality, the F-test results demonstrate that brand association and perceived quality, when combined, significantly affect user loyalty ($F = 52.668$, $p < 0.001$). This indicates a synergistic relationship, where both emotional branding and service delivery work together to retain users. This insight has been supported by Choudhury & Shamszare (2023), whose research showed that trust (often a product of both brand image and quality assurance) is central to AI service adoption.

From a strategic standpoint, this means that while perceived quality may not be sufficient to ensure loyalty on its own, it remains a vital foundation upon which effective branding can be built. Ahmed et al. (2014) also noted that quality should be consistently maintained to uphold the credibility of brand associations. In the AI education context, branding efforts should emphasize not only the tool’s technical capabilities but also its symbolic role in student achievement and digital literacy.

This study was designed to address a clear gap in the existing literature on brand loyalty within the rapidly evolving context of AI services. Our findings allow us to clearly delineate the contributions of this work when contrasted with prior studies.

Previous research in various sectors has consistently positioned perceived quality as a primary, direct antecedent of loyalty (e.g., Beneke et

al., 2013; Anwar & Andrean, 2021) [36,32]. Our results challenge the universal applicability of this paradigm in the AI context. We demonstrate that for a sophisticated, free-tier AI tool like ChatGPT among student users, perceived quality, while important, loses its dominant direct influence. It appears to function as a *hygiene factor*—a baseline expectation—rather than a key differentiator for loyalty. This finding contrasts with studies in other digital services where quality remains paramount [33].

Our study extends the work on brand association by applying it to a non-human, intelligent agent. Prior research focused on associations with physical attributes or corporate image (Mawadati et al., 2023; Jin et al., 2019) [26,13]. We show that in the AI domain, the most potent associations are symbolic and experiential—such as viewing ChatGPT as an "intellectual partner" or a symbol of "academic efficiency." This aligns with and empirically supports emerging concepts like parasocial brand relationships (Wang et al., 2025)[9], but moves further by demonstrating that these relational associations can be a *more powerful* predictor of loyalty than functional performance metrics in this specific context.

Synthesizing these findings, our main contribution is the proposition of a contextual hierarchy of loyalty drivers for AI services. For students, the loyalty sequence appears to be driven first by a strong, identity-relevant Brand Association, which is then *supported* by a baseline of Perceived Quality. This reordering of established variables provides a more accurate model for predicting and understanding user retention for AI platforms compared to the direct application of traditional marketing models.

6. CONCLUSION AND SUGGESTIONS

Based on the results of this study on the influence of Brand Association and Perceived Quality on ChatGPT user loyalty among Master's students in Communication Science, several conclusions can be drawn as follows:

Brand Association has a significant and dominant influence on ChatGPT user loyalty. Students who hold strong and positive perceptions of ChatGPT's brand image and identity tend to demonstrate higher levels of continued use. This suggests that emotional attachment and trust in the

brand play a crucial role in shaping user loyalty, particularly in academic and professional contexts.

Perceived Quality, although generally rated positively by users, does not have a significant direct influence on user loyalty. Service quality aspects such as accuracy, reliability, and ease of access are not sufficient on their own to ensure long-term user commitment. This implies that perceived quality tends to be viewed as a functional attribute that can easily be substituted, and thus does not serve as a primary driver of loyalty.

Simultaneously, the combination of Brand Association and Perceived Quality has a significant effect on user loyalty. Although Perceived Quality does not exert a significant individual effect, its presence contributes to strengthening the impact of brand association on loyalty. Hence, user loyalty is shaped not only by emotional factors (brand association) but also supported by rational evaluations of service quality, albeit to a lesser degree.

Among the two variables studied, Brand Association exerts a greater influence on user loyalty compared to Perceived Quality. This finding indicates that, within the context of ChatGPT usage among students, emotional, symbolic, and identity-based factors are more influential in fostering loyalty than rational considerations of service performance. Therefore, it is recommended that marketing and brand development strategies prioritize strengthening brand image, values, and user experience to ensure long-term user loyalty.

This study is limited by its sample size and scope, focusing only on communication science students from a single university. As such, the generalizability to other disciplines or user populations (e.g., working professionals or non-academic users) may be limited. To address the non-significant direct relationship between Perceived Quality and User Loyalty, future research should incorporate potential mediating variables such as Brand Trust, Perceived Value, or User Satisfaction. Integrating these construct pathways could provide deeper empirical insights into how quality evaluations indirectly shape long-term user retention in AI-based platforms

Additionally, this study relied on self-reported measures, which are subject to biases such as social desirability or recall error. Qualitative studies or experimental designs could add depth by capturing narratives of user-brand relationships or testing interventions that strengthen brand association.

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