

ARTIFICIAL INTELLIGENCE AND SOCIAL MEDIA SENTIMENTS AS DRIVERS OF CUSTOMER LOYALTY IN FAST-MOVING CONSUMER GOODS**S. Shanmugapriya**Research Scholar, Department of Business Administration
Kalasalingam Business School, Kalasalingam Academy of Research and Education, Krishnankoil
Email id: mpriya2615@gmail.com**Dr. R. Thiru Murugan**Associate Professor, Department of Business Administration
Kalasalingam Business School, Kalasalingam Academy of Research and Education, Krishnankoil
Email id: r.thirumurugan@klu.ac.in**ABSTRACT**

The accelerated digitalization of the marketing process within the fast-moving consumer goods (FMCG) industry has increased the role of artificial intelligence (AI)-based brand interaction and sentiment on social media in customer retention. The contribution of these digital mechanisms to the development of loyalty remains crucial in the low-involvement consumption situations that are very competitive. According to the survey data, which was received among the consumers of FMCGs, the interdependence between AI-based brand interaction, social media sentiment perception, brand trust, and customer loyalty was empirically examined through the mediation analysis conducted by regression. The findings indicate that AI-based brand interaction and social media sentiment perception positively affect customer loyalty, but the latter has a stronger effect. Brand trust proves to be the best predictor of loyalty and a full mediator between the image of social media sentiment and customer loyalty. On the other hand, AI-based brand interaction demonstrates a more direct, but less potent impact on the loyalty and does not add to the brand trust to a significant degree. These results prove that trust is the key to transforming digital information signals into long-term loyalty and can show that AI primarily influences the loyalty through experiential and not relational processes. The study contributes to the area of digital marketing by integrating the interaction based on AI and social media sentiment into one concept of loyalty and offers a plausible perspective on the FMCG companies that attempt to reach a balance between technological innovation and trust-based strategies.

KEYWORDS: Artificial Intelligence, Social Media Sentiment, Brand Trust, Customer Loyalty, FMCG Marketing.**1. Introduction**

The fast-moving consumer goods (FMCG) sector is evolving at a tremendous rate because of the quickening integration of digital technologies and data-driven marketing operations. The increased competition, low switching cost and exposure of customers to more information in the internet has made sure that customer loyalty has become a huge strategic consideration by the FMCG brands. It is against this dynamic landscape that companies are increasingly considering artificial intelligence (AI)-enabled brand interactions and social media avenues to engage consumers, personalize experiences and make purchase-related choices. The impact that such digital processes have on customer loyalty, therefore, has become an important issue of concern in the recent marketing research. AI has emerged as one of the most important mediators of scalable and customized brand interactions in the online marketing environment. Recommendation systems, chatbots, and automated customer service are AI-driven applications that allow the brands to tailor content, offers, and communication based on personal preferences and behavioral data of consumers. According to previous studies, AI-based marketing tools may increase perceived value and customer experience, thus reinforcing customer relationships over the long term when used properly (Kumar et al., 2024). Nevertheless, the degree to which brand interaction mediated by AI is directly correlated with customer loyalty, especially in low-involvement products like FMCG is not adequately investigated.

Social media has emerged as one of the most dominant platforms where consumers can pursue, exchange, and judge brand-related information with the help of AI-powered interactions. The social media mood, in terms of user generated reviews, comments and opinions are key elements in determining the perception of the consumers concerning brand credibility and quality. According to empirical evidence, consumers are becoming more and more dependent on social media indicators to shape attitudes and modify buying behavior particularly in the settings of information saturation and brand parity (Dwivedi et al., 2021). Consequently, the social media sentiment has been widely identified as a strong factor in the process of consumer decision-making. The social media sentiment role is especially relevant in the FMCG environment, as purchases are often routine and relatively low-risk. Favourable or unfavourable online comments may have a cumulative effect on the trust in a brand and strengthen or undermine loyalty in the long run. Recent research in the FMCG industry emphasizes the significance of social media marketing practices in increasing brand trust and customer-brand relationships (Ahuja and Tabeck, 2024). Regardless of this accumulation of literature, there is little empirical research to investigate the interplay between social media sentiment and AI-based brand engagement processes to determine the final consequences of customer loyalty. Brand trust is a highly important psychological process that connects digital brand experiences and loyalty-related behavior. Trust minimizes perceived uncertainty, boosts confidence in brand claims and willingness of consumers to have long-term relationships with brands. Previous studies highlight that trust can be used to mediate the impact of marketing communication and interaction on the loyalty, especially in digitally mediated contexts (Lang et al., 2023). In AI-based and highly social media-saturated settings, it is critical to comprehend how trust can be a driver through which digital interactions can affect loyalty in theory and practice. Despite the presence of the literature review on AI applications, social media usage, and brand loyalty, there is little empirical research that has been conducted on the relationship between these variables, particularly in the context of an emerging market of FMCG. Recent research indicates that AI can act as a situational source of interaction and retention instead of a universal factor, and the industry should be analyzed separately (Long et al., 2024). Besides, the development of sentiment analytics highlights the dynamism of social media sentiments in influencing the consumption behavior, which also supports the significance of studying sentiment-based impacts on loyalty development (Weng et al., 2025). In order to fill these gaps, the present study examines the role of AI-mediated brand interaction and social media sentiment perception in influencing customer loyalty in the FMCG sector, and brand trust is viewed as an intermediate variable. The study can contribute to the literature because it will allow to comprehend the relative and interactive role of AI and social media sentiment on the result of loyalty. The findings add to the theoretical knowledge of digital loyalty formation and provide practical recommendations to the FMCG managers interested in the opportunities of the application of AI and social media to form a long-term customer relationship.

2. Literature Review

The recent rapidly developing digital technologies have transformed the essence of marketing and consumer interaction radically, in particular, with the integration of artificial intelligence (AI) and social media platforms. AI is a disruptive technology in marketing that has enabled businesses to manage high amounts of consumer data, automate consumer interactions and deliver personalized experiences at scale. Theoretical and practical studies on AI in marketing indicate that it can transform the brand-consumer relations into non-transactions but instead continuous and data-based interactions (Sterne, 2017). By being personalized, predicted and automated with algorithms, AI-driven brand experiences have the potential to enhance perceived convenience, relevance and responsiveness which are major determinants of customer loyalty in competitive markets. The existing empirical evidence shows that AI-based marketing applications can influence customer perceptions of brands in a number of ways. According to Dong (2025), the use of AI assists in brand equity by increasing the feelings of competence, innovativeness, and reliability. Similarly, Madanchian (2024) demonstrates that AI-based marketing operations positively affect the consumer attitudes and purchase intentions, particularly in the digitally mediated environment. However, AI-based brand interaction will be successful when the consumer has confidence in automated systems and feels that AI-based functionality aligns with consumer needs. In this regard, Miklosik and Evans (2020) observe that AI should be incorporated into a broader digital transformation strategy to generate meaningful customer value rather than adopting it as a standalone technological solution. Along with the evolution of AI, social media has become one of the most popular consumer information transmission mediums and brand-related discussion. The social media platforms enable the consumers to share their experiences, opinions and evaluations creating an endless stream of content laden with emotion that forms brand perception. According to Schivinski (2021), social media activities relating to a brand are significant in the formation of consumer attitude and behavioral impacts, particularly user-generated content. The emotion conveyed by social media in the form of online reviews, comments and discussions is a social proof mechanism which reduces information asymmetry and influences purchases.

Research-wise, social media has gained increased interest as a marketing instrument and as an analytical field. According to Li et al. (2023), social media marketing research has been more concerned with the study of the influence of digital interactions on consumer cognition, emotion, and behavior. In the FMCG setting where

product differentiation is not always significant and purchases are made regularly, the social media sentiment can have a cumulative effect on brand assessment and loyalty in the long term. Additionally, sentiment analysis and natural language processing have improved the scale of capturing and analyzing consumer sentiment dynamics by researchers, giving more insights into consumer-brand relationships (Weng et al., 2025). One of the most important psychological constructs that interconnects the AI-based brand interaction and the sentiment of social media with customer loyalty is the brand trust. Brand trust indicates the confidence of consumers to a brand in terms of reliability, integrity, and customer orientation. Previous studies have repeatedly highlighted the importance of trust as one of the antecedents of long-term customer relationships, especially in digitally mediated settings where human interaction is restricted. As Ahuja and Tabeck (2024) show, the activities of social media marketing have a great impact on brand trust in the FMCG industry as they shape the perception of transparency, credibility, and responsiveness. Trust helps in minimizing the perceived risk and uncertainty hence leading to repeat purchase behaviour and brand advocacy.

Trust and loyalty have been studied in a wide context in the field of marketing. According to Lang et al. (2023), trust is a key process by which the marketing activity can be converted into long-term loyalty, particularly in new markets where competition is high, and the information flow is overwhelming. On the same note, Kilimci (2022) notes that the presence of trust-related cues in the digital content is a decisive factor in determining user loyalty, especially where consumers are dependent on mediated sources of information. These findings demonstrate the need to consider trust as a result, as well as an intermediate variable in digital marketing models. The need to be efficient, scalable, and prompt in consumer response is another strategic value of digital technologies in the FMCG industry. As the article by Long et al. (2024) shows, AI can enhance customer engagement and customer loyalty in the FMCG markets and this happens when the larger marketing strategies are incorporated. However, they also caution that the impact of AI may be rather various depending on the consumer preparedness and the situation. Consistent with this opinion, GhanavatiNejad et al. (2025) observe that digital structures can be integrated to make FMCG supply chains operate and respond to the market, which indirectly increases customer satisfaction and loyalty rates.

Along with the application of AI and marketing via social media in companies, broader digital economy lenses are essential in the meaning of the phenomenon. Javaid et al. (2024) state that the central role of digital technologies in Industry 4.0 transformation is the most important factor since it changes the organizational culture, customer interaction processes, and value creation processes. Likewise, Li et al. (2020) emphasize that the digital economy within the emerging markets brings opportunities and threats to the companies that are interested in taking advantage of the technology-driven consumer insights. These perspectives reinforce the fact that empirical studies are necessary that would explore the impact of digital tools on consumer behavior within specific industry context. Even though the literature on AI, social media, and customer loyalty is increasingly expanding, there are still a number of gaps. The literature in this area usually investigates applications of AI or social media involvement separately, with few attempts to combine sentiment-based processes and trust-based channels. Moreover, the empirical data on FMCG situations, especially in the emerging markets, is rather limited. The current paper fills in these gaps through the analysis of AI-based brand interaction and social media sentiment perception as mutually driving customer loyalty, with the mediating role of brand trust explicitly taken into account.

3. Methodology

3.1 Research Design and Framework: The research design used in the study is a quantitative, cross-sectional survey research design to investigate how Artificial Intelligence (AI)-mediated brand interactions and social media sentiment perceptions affect customer loyalty in the fast-moving consumer goods (FMCG) industry. The structured questionnaire method was used since it is suitable in the context of capturing the perceptions, attitudes, and behavioral intentions of consumers in regard to digital brand engagement and social media information cues. The study is based on an explanatory design, which aims at testing theoretically based relationships between the constructs of the study in an empirical way.

The study framework is based on the analytical framework of digital marketing and consumer trust theory. The conceptualization of AI-based brand interaction and social media sentiment perception is based on the antecedent constructs that affect customer loyalty and brand trust is placed as an intervening mechanism. This theoretical premise is reflected in this conceptualization in the sense that the exposure of consumers to opinions on social media is the main determinant of the loyalty based on the formation of trust, and that AI-based brand interactions can also determine the loyalty by improving customer experience and strengthening positive brand perceptions. The framework provides the directional associations between the constructs, as well as, informs the operationalization of the variables and the regression-mediation approach, which the study will be carried out, but does not suggest a procedural or methodological workflow.

3.2 Sample and Data Collection: The primary data was obtained by using a self-administered questionnaire to the consumers of the FMCGs. A total of 100 full and useful responses were collected and incorporated into the final analysis. Non-probability convenience sampling technique was used to select the respondents, and this is a common method of sampling in the study of consumer behavior where the data collection process is supported by the online platform. The participants were requested to give the answers in relation to a brand of FMCG they buy most of the time. Before the study, the respondents were made aware of the educational nature of the research and guaranteed confidentiality and anonymity.

3.3 Measurement Instrument and Data Preparation: The questionnaire was divided into two parts. The former section included demographic data, such as age, gender, education, occupation, level of income, district, favorite social media platform, and frequently bought category of FMCG. All these variables were described to describe the sample and were not involved in any inferential analyses. The second part was used to measure the core constructs of the study with multi-item perceptual scales. Everything was measured using a five-point Likert scale where 1 (Strongly Disagree) to 5 (Strongly Agree) was used. Table 1 summarizes the constructs, conceptual definitions, and the number of measurement items.

Table 1. Constructs and Measurement Structure

Construct	Description	Number of Items
Social Media Usage Intensity (SMU)	Frequency and intensity of social media use related to FMCG brands	3
AI-Driven Brand Interaction (AI)	Perceived use of AI for personalization, recommendations, and support	6
Social Media Sentiment Perception (SM)	Perceived influence and credibility of social media opinions	6
Brand Trust (BT)	Perceived reliability, honesty, and customer orientation of the brand	4
Customer Loyalty (CL)	Repeat purchase intention, advocacy, and emotional attachment	6

The raw survey data was initially in the form of Likert responses that are represented by string (e.g., Agree, Strongly Agree). During the preprocessing of the data, all Likert answers were standardized to eliminate discrepancies in the capitalization and formatting. The coded responses were then transformed into numerical values based on the pre-determined five-point Likert scale in order to make them easy to analyze statistically. Table 2 shows the coding scheme used in the study. Numerical transformation was only done to perceptual scale items, and demographic variables were kept in their categorical form.

Table 2. Likert Scale Coding Scheme

Response Category	Numerical Code
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

3.4 Construct Formation and Reliability Assessment

After the data coding, the measurement items were clustered into their own theoretical constructs according to the research framework. A composite score was calculated by summing up the items within each construct. The mean scores also do not alter the original Likert scale characteristics and are popular in marketing and consumer behavior study literature to characterize latent constructs measured with multiple indicators. Before inflicting the inferential analysis, the internal consistency of every multi-item construct was evaluated through Cronbachs alpha. The methodological requirement of reliability analysis has been conducted to guarantee that items contained in every construct have sufficient internal consistency and can be subject to further statistical modeling. Constructs that passed the reliable standards were only retained to be analyzed further hence ensuring the robustness and validity of the measurement model.

3.5 Data Analysis and Mediation Testing: Analysis of data was done in a systematic and chronological manner. A preliminary computation of descriptive statistics was done to describe the central tendency and dispersion of the composite variables. Pearson correlation was subsequently utilized to investigate linear relationships between the constructs as well as to determine the appropriateness of regression based modeling. Ordinary least squares (OLS) regression analysis was performed to test the proposed relationships with the help of a stepwise modeling approach. To test the direct impact of AI-driven brand interaction and social media sentiment perception on customer loyalty, their impact on brand trust, and overall impacts with brand trust, separate regression models were estimated. A mediation approach

that was based on regression was used to evaluate the mediating role of brand trust. In order to test the statistical significance of indirect effects on the relationship between AI-driven brand interaction and customer loyalty, and social media sentiment perception and customer loyalty, a Sobel test was used to assess the relationship between brand trust and the relationships.

3.6 Ethical Considerations: The research was conducted in accordance with the ethical research practices. The involvement was voluntary, and all the respondents gave informed consent, and the data were utilized purely on an academic basis. No personal information was used in the analysis.

4. Results

4.1 Descriptive Statistics and Measurement Reliability: The analysis commences with the investigation of the descriptive properties and measurement reliability of the study constructs to create an empirical basis on which the further inferential testing will be built. To describe the general perceptions of the respondents on the intensity of social media use, AI-assisted brand interaction, social media sentiment perception, brand trust, and customer loyalty in the FMCG setting, composite mean scores and standard deviations were calculated. Table 3 reports these statistics.

Table 3. Descriptive Statistics of Study Constructs

Construct	Mean	Standard Deviation
Social Media Usage Intensity (SMU)	3.453	0.795
AI-Driven Brand Interaction (AI)	3.720	0.659
Social Media Sentiment Perception (SM)	3.797	0.664
Brand Trust (BT)	3.808	0.712
Customer Loyalty (CL)	3.823	0.735

The mean values of all constructs are above the midpoint of the five-point Likert scale, which implies rather positive consumer perceptions. The mean score of customer loyalty is the highest (M = 3.823), then brand trust (M = 3.808) which indicates high intentions of loyalty with the support of trust in FMCG brands. The perception of social media sentiment (M = 3.797) and AI-driven brand interaction (M = 3.720) reflect the preference to regard social media opinions as the influential and credible ones and the positive ratings of AI-based personalization and customer support, respectively. The intensity of the social media use, which is relatively low (M = 3.453), is beyond the midpoint, indicating moderate and high use of social media platforms in reference to FMCG brands.

The range of responses is also significant, which means that there is sufficient variability between constructs and this fact justifies the use of constructs in the analysis. These descriptive patterns are graphically depicted in Figure 1 that shows the mean scores and the corresponding standard deviations of all constructs.

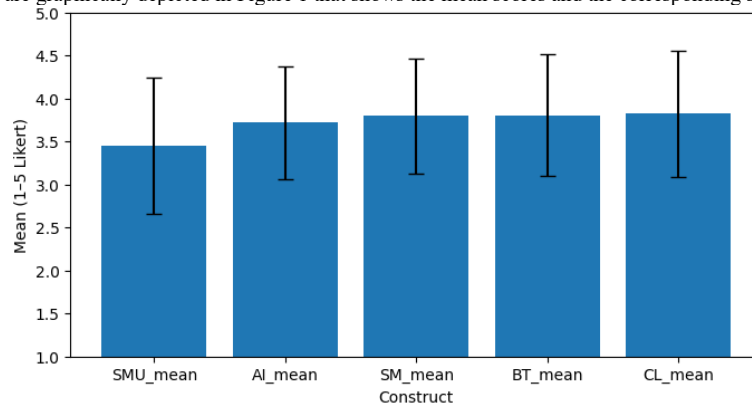


Figure 1. Mean Scores of Study Constructs with Standard Deviations

Besides the descriptive statistics, the internal consistency of the measurement scales was also empirically tested. The results of the Cronbach alpha analysis of the reliability coefficients suggest that there is an acceptable to excellent internal consistency of all constructs. The level of relative reliability of the measurement scales are graphically summarized in Figure 2 that shows the Cronbach alpha of each construct.

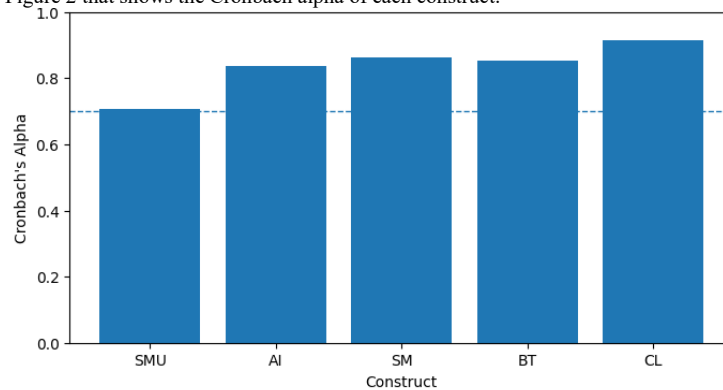


Figure 2. Reliability of Measurement Scales (Cronbach's Alpha Values)

4.2 Correlation Analysis: Pearson correlation analysis was performed to further examine the interrelationship between the study constructs and to determine the appropriateness of regression-based modeling. This discussion offers a preliminary empirical understanding of the intensity and the direction of relationships between social media usage intensity, AI-mediated brand interaction, social media sentiment perception, brand trust and customer loyalty. The study of these bivariate relationships is useful to define whether the constructs are interconnected in a way that is consistent with the proposed research framework and assist in the choice of further multivariate methods. Table 4 shows the correlation coefficients of all constructs of the study.

Table 4. Pearson Correlation Matrix

Construct	SMU	AI	SM	BT	CL
SMU	1.000	0.633	0.518	0.484	0.503
AI	0.633	1.000	0.733	0.602	0.615
SM	0.518	0.733	1.000	0.720	0.671
BT	0.484	0.602	0.720	1.000	0.852
CL	0.503	0.615	0.671	0.852	1.000

The results of the correlation indicate positive relationships between all the constructs. The sentiment perception of the social media is positively correlated to brand trust (r = 0.720), which shows that positive perceptions of the online opinions are strongly related to greater trust of the FMCG brands. The correlation between brand trust and customer loyalty (r = 0.852) is the highest, which confirms the central position of trust in shaping the loyalty behaviors. AI-based brand interaction has moderate relationships with brand trust (r = 0.602) and customer loyalty (r = 0.615), indicating that AI-based interactions lead to both attitudinal and behavioral consequences. All the correlation coefficients do not raise any concerns on multicollinearity.

4.3 Direct Effects of AI-Driven Brand Interaction and Social Media Sentiment Perception on Customer Loyalty

Ordinary least squares (OLS) regression analysis was used to determine the direct effect of AI-based brand interaction and social media sentiment perception on the customer loyalty. The model evaluates how far AI-enabled brand interactions and perceptions of consumers about social media sentiments are independent predictors of customer loyalty variations. The estimation of this baseline model enables the assessment of the direct relationships before the addition of any intervening variables and a baseline on which mediation analysis will be done later. Table 5 shows the regression findings of the direct effects model.

Table 5. OLS Regression Results: Direct Effects on Customer Loyalty

Predictor	β	Std. Error	t-value	p-value
AI-Driven Brand Interaction	0.297	0.120	2.484	0.015
Social Media Sentiment Perception	0.526	0.119	4.426	<0.001

Both predictors have significant positive impacts on customer loyalty that are statistically significant. The perception of the social media sentiment shows that the online opinions are more effective, and the online opinions should be considered when forming the loyalty to the brands of FMCG. The positive effect of AI-based brand interaction is also significant, which means that AI-based personalization and support increase the loyalty results. The model explains 48.3% of the variance in customer loyalty ($R^2 = 0.483$).

4.4 Effects of AI-Driven Brand Interaction and Social Media Sentiment Perception on Brand Trust

To test whether AI-based brand interaction and social media sentiment perception serve as antecedents of brand trust, an ordinary least squares (OLS) regression model has been estimated with brand trust identified as a dependent variable. Such analysis allows determining the relative role of digital brand interactions and perceived social media opinion in the development of trust in FMCG brands. The estimation of this model is also a requirement to the determination of the possible mediating role of brand trust in later analyses. Table 6 shows the results of the regression analysis.

Table 6. OLS Regression Results: Predictors of Brand Trust

Predictor	β	Std. Error	t-value	p-value
AI-Driven Brand Interaction	0.173	0.111	1.566	0.121
Social Media Sentiment Perception	0.645	0.110	5.876	<0.001

These findings suggest that brand trust is strongly and statistically significantly affected by social media sentiment perception but the impact of AI-based brand interaction is not significant. The model accounts for 53.0% of the variance in brand trust ($R^2 = 0.530$).

4.5 Mediation Analysis: Role of Brand Trust in Customer Loyalty

A third OLS regression model was estimated to test the mediating role of brand trust in the associations between AI-driven brand interaction, social media sentiment perception, and customer loyalty. The regression of customer loyalty was done on AI based brand interaction, social media sentiment perception, and brand trust. The results are presented in Table 7.

Table 7. OLS Regression Results: Mediation Model for Customer Loyalty

Predictor	β	Std. Error	t-value	p-value
AI-Driven Brand Interaction	0.165	0.086	1.913	0.059
Social Media Sentiment Perception	0.032	0.098	0.322	0.748
Brand Trust	0.766	0.078	9.817	<0.001

The inclusion of brand trust substantially increases the explanatory power of the model ($R^2 = 0.742$). Brand trust emerges as the dominant predictor of customer loyalty, while the effects of AI-driven brand interaction and social media sentiment perception are attenuated. The relative magnitudes of these direct effects are illustrated in Figure 3.

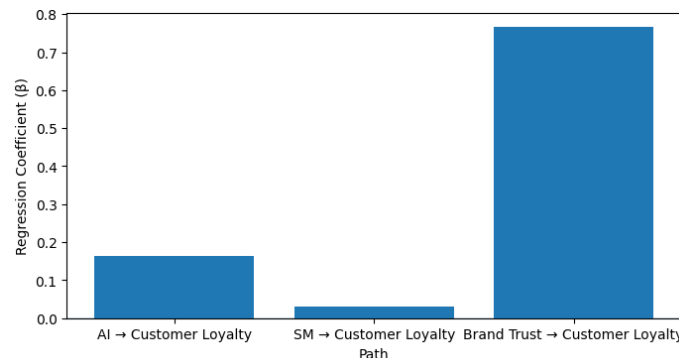


Figure 3. Direct Effects of AI-Driven Brand Interaction, Social Media Sentiment Perception, and Brand Trust on Customer Loyalty

4.6 Sobel Test for Mediation Effects

The statistical significance of the indirect effects found in the mediation analysis was formally evaluated by the Sobel test. The test is used to test the hypothesis that the addition of the mediating variable gives a statistically significant indirect relationship between the independent variables and customer loyalty. The additional empirical data on the mediation effects of the regression models is given by the application of the Sobel test. Table 8 shows the results of Sobel test.

Table 8. Sobel Test Results for Mediation Effects

Mediation Path	Z-value	p-value
Social Media Sentiments → Brand Trust → Customer Loyalty	5.042	<0.001
AI → Brand Trust → Customer Loyalty	1.547	0.122

The Sobel test indicates that a statistically significant indirect effect of the perception of social media sentiment on customer loyalty by the brand trust is confirmed, but the indirect effect of the AI-driven brand interaction is not statistically significant. The difference in the pre- and post-intervention of brand trust is graphically illustrated in Figure 4.

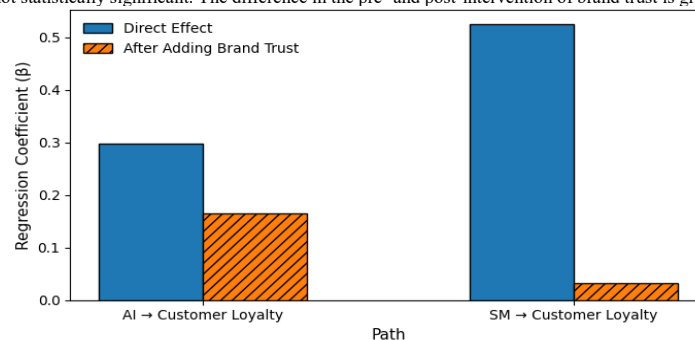


Figure 4. Mediating Role of Brand Trust in the Relationships Between AI, Social Media Sentiments, and Customer Loyalty

Discussion

This research analyzed how AI-based brand interaction and social media sentiment perception influence customer loyalty in the FMCG industry where brand trust served as a mediating variable. The results present subtle information about the joint influence of digital technologies and consumer-generated information on the results of loyalty in a high-frequency, low-involvement consumption environment. The findings indicate that AI-mediated brand interaction, as well as social media sentiment perception have a strong direct impact on customer loyalty. Nevertheless, the perception of the social media sentiment is more influential, and the role of peer-generated opinions and reviews in influencing the loyalty in the FMCG industries cannot be overlooked. This observation corresponds to the existing studies that focus on the importance of social and informational signals in consumer decision-making, especially in digitally mediated contexts, where trust and credibility are conditioned by the experience (Sakyi et al., 2022). Conversely, AI-based interactions are a positive factor in the loyalty but they seem to be more of a conditional and contextual factor. The analysis also indicates that the perception of social media sentiment is highly and significantly affecting the brand trust, but AI-driven brand interaction is not significantly predicting brand trust directly. This implies that consumers will tend to build trust on FMCG brands through shared social judgments as opposed to automatic brand engagement on its own. This observation is aligned with the conceptual frameworks of loyalty in AI-driven markets, which claim that technology can be more engaging, but it does not necessarily result in trust unless it is backed by plausible social validation (Laksamana et al., 2024). It also indicates the anxieties expressed in the literature about the cautious nature of consumers towards automated systems, especially in ordinary buying situations. Brand trust becomes the strongest predictor of the customer loyalty and completes the association between the social media sentiment perception and loyalty. This means that the sentiments of social media affect loyalty in ways that depend on the creation of trust in the brand, but not via attitudinal channels. The outcomes of the mediation support the thesis that trust is an important psychological process that connects digital information cues to long-term behavioral outcomes. These results echo the works that discuss the role of trust as a key factor in the digital engagement to long-term loyalty (Chau et al., 2025).

Conversely, the moderating effect of brand trust in the correlation between the AI-based brand interaction and customer loyalty is not substantiated. Even though AI-based interaction has a marginal direct impact on loyalty, considering trust, the indirect channel of interaction via trust is not significant. This implies that AI can affect loyalty in different ways, namely, convenience, efficiency, or perceived innovativeness instead of forming trust. This meaning agrees with the wider discourse in the AI marketing literature, which highlights the opportunities as well as constraints of AI to influence relational outcomes (Dwivedi and Wang, 2022). As a manager, the findings highlight the importance of a balanced digital strategy by FMCG companies. Although AI-based personalization and customer care can contribute to loyalty, companies cannot afford to use AI as the only means of gaining trust. Rather, the social media sentiment should be managed and monitored as the consumer-generated content is leading in building trust. The combination of AI insights and sentiment analytics can allow the companies to address consumer concerns more efficiently and strengthen the relations based on trust. Furthermore, service analytics and customer experience management can be used to align AI initiatives and enhance the loyalty outcomes (Filani et al., 2023).

Although it contributes to it, this study has limitations. Such a limitation is that the use of cross-sectional survey data limits causal inference, whereas the use of self-reported perceptions could introduce bias in response. Also, the research concentrates on one country FMCG environment, which can be a constraint in the ability to generalize the findings to other markets with varying levels of digital maturity. Further studies may use longitudinal research designs to study the effects of AI and social media sentiment on loyalty in the long term. Further research on comparative studies between product categories or cultural backgrounds would be of greater value to comprehending the contextual boundary conditions. Also, further research may consider other potential mediators, including perceived value or customer satisfaction, to summarize the mechanisms in general by which AI-mediated interactions affect loyalty.

Conclusion

This paper examined the relationships between artificial intelligence-based brand interaction and social media sentiment perception as predictors of customer loyalty in the fast-moving consumer goods industry, and brand trust was considered an intervening variable. The results indicate that AI-based interactions and social media sentiments have a similar effect of customer loyalty, but the effects have different mechanisms. The perception of social media sentiment proves to be one of the most powerful ones, as it influences customer loyalty mostly due to the establishment of brand trust. This emphasizes the focal position of consumer-generated content and mutual brand reviews in the formation of trust and long-term loyalty. Conversely, AI-based brand interaction has a direct but relatively less impact on customer loyalty and does not have a significant positive effect on trust. This is the reason to believe that although AI technologies enhance efficiency, personalization, and customer experience, the effect on relational outcomes may be conditional on the presence of complementary trust-building mechanisms. Brand trust is found to be the most important factor in defining customer loyalty, which supports the importance of brand trust as a cornerstone in consumer-brand relationships mediated digitally. Through the combination of AI-based brand interaction and social media sentiment in a single framework of analysis, the research contributes to the body of knowledge on digital loyalty formation in FMCG markets. The results are useful to managers who want to strike a balance between technological innovation and trust-based strategies and can be used as the basis of the future.

References

1. Ahuja, V., & Tabeck, P. S. (2024). Enhancing brand trustworthiness, relationships, congruence and positioning through social media marketing in the FMCG sector. *Cogent Business & Management*, 11(1), 2434203.
2. Chau, H. K. L., Ngo, T. T. A., Bui, C. T., & Tran, N. P. N. (2025). Human-AI Interaction in E-Commerce: The Impact of AI-Powered Customer Service on User Experience and Decision-Making. *Computers in Human Behavior Reports*, 100725.
3. Dong, Y. (2025). Implementation of artificial intelligence for brand equity. *Cogent Business & Management*, 12(1), 2471538.
4. Dwivedi, Y. K., & Wang, Y. (2022). Guest editorial: Artificial intelligence for B2B marketing: Challenges and opportunities. *Industrial Marketing Management*, 105, 109-113.
5. Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., ... & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International journal of information management*, 59, 102168.
6. Filani, O. M., Olajide, J. O., & Osho, G. O. (2023). Artificial Intelligence in Demand Forecasting and Inventory Optimization.
7. GhanavatiNejad, M., Tavakoli, M., Sheikhalishahi, M., Aydın, N., & Aria, S. S. (2025). An integrated smart framework for fast-moving consumer goods online market logistics: a digital twin framework. *Journal of Industrial and Production Engineering*, 1-17.
8. Javaid, M., Haleem, A., Singh, R. P., & Sinha, A. K. (2024). Digital economy to improve the culture of industry 4.0: A study on features, implementation and challenges. *Green Technologies and Sustainability*, 2(2), 100083.
9. Kilimci, Z. H. (2022). Prediction of user loyalty in mobile applications using deep contextualized word representations. *Journal of Information and Telecommunication*, 6(1), 43-62.
10. Kumar, V., Ashraf, A. R., & Nadeem, W. (2024). AI-powered marketing: What, where, and how?. *International journal of information management*, 77, 102783.
11. Laksamana, P., Suharyanto, S., Saripudin, S., & Cahaya, Y. F. (2024, November). Developing Brand Loyalty in AI-Driven Markets: A Conceptual Model. In *International Conference on Business and Technology* (pp. 395-403). Cham: Springer Nature Switzerland.
12. Lang, L. D., Behl, A., Guzmán, F., Pereira, V., & Del Giudice, M. (2023). The role of advertising, distribution intensity and store image in achieving global brand loyalty in an emerging market. *International Marketing Review*, 40(1), 127-154.
13. Li, F., Larimo, J., & Leonidou, L. C. (2023). Social media in marketing research: Theoretical bases, methodological aspects, and thematic focus. *Psychology & Marketing*, 40(1), 124-145.
14. Li, K., Kim, D. J., Lang, K. R., Kauffman, R. J., & Naldi, M. (2020). How should we understand the digital economy in Asia? Critical assessment and research agenda. *Electronic commerce research and applications*, 44, 101004.
15. Long, H. C., Anh Quan, P. N., Xuan Tra, N. H., Pham, T. D., Thuy Linh, N., & Khanh Doan, N. H. (2024). Factors affecting customer engagement and brand loyalty in Vietnam FMCG: the moderation of artificial intelligence. *Cogent Business & Management*, 11(1), 2428778.
16. Madanchian, M. (2024). The impact of artificial intelligence marketing on e-commerce sales. *Systems*, 12(10), 429.
17. Miklosik, A., & Evans, N. (2020). Impact of big data and machine learning on digital transformation in marketing: A literature review. *Ieee Access*, 8, 101284-101292.
18. Sakyi, J. K., Nnabueze, S. B., Filani, O. M., Okojie, J. S., & Okereke, M. (2022). Customer service analytics as a strategic driver of revenue growth and sustainable business competitiveness. *Journal of Frontiers in Multidisciplinary Research*, 3(2), 109-123.
19. Schivinski, B. (2021). Eliciting brand-related social media engagement: A conditional inference tree framework. *Journal of Business Research*, 130, 594-602.
20. Sterne, J. (2017). *Artificial intelligence for marketing: practical applications*. John Wiley & Sons.
21. Weng, Y., Isleem, H. F., Hindi, K. E., & Ezugwu, A. E. (2025). Natural language processing for extracting consumer sentiment dynamics through multimodal social media analysis to predict microeconomic consumption pattern shifts. *Journal of Big Data*, 12(1), 254.