

# Exploring Impact of AI on Customer Care and Brand Loyalty Among Millennials And Gen Z In London

# Introduction

Artificial intelligence (AI) is reshaping customer service, influencing brand perceptions and loyalty. This quantitative study examines consumer experiences with AI-driven customer interactions, focusing on 18-35-year-olds in London from the Millennial and Generation Z cohorts. The research explores four key objectives: evaluating consumer satisfaction with AI agents, assessing the role of perceived empathy in AI service encounters, analysing AI's impact on brand personality and loyalty, and identifying generational differences in AI affinity and emotional engagement.

A structured survey was conducted with 100+ participants meeting the specified criteria. The questionnaire measured seamlessness, problem-solving, empathy, brand perception changes, and loyalty intentions. Data analysis employed regression, correlation, ANOVA, and t-tests to test hypotheses and uncover significant relationships. Findings provide insights into how AI-driven interactions shape consumer attitudes, highlighting both opportunities and challenges in balancing automation with human-like service experiences.

## Data Overview

Data was collected via an online survey hosted on SurveyMonkey and widely distributed among university students in London. The questionnaire included segments on consent, AI interaction experience and frequency, perceived AI qualities, comparative preferences, brand perception and loyalty, and demographics. These sections provided in-depth insights into customer experiences, ensuring a comprehensive analysis of AI's impact.

\* Have you ever had an experience with an AI customer care or AI ChatBot in your consumer journey?

☐ Yes

☐ No

\* How often do you have an encounter with an AI Customer Care or AI ChatBot?

☐ 1. Never

☐ 2. Rarely

☐ 3. Occasionally


☐ 4. Sometimes

☐ 5. Often

☐ 6. Very Often

☐ 7. Always

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What is your age? 

☐ Under 18

☐ 18-24

☐ 25-34

☐ 35-44

☐ 45-54

☐ 55-64

☐ 65+

## Research Questions and Hypothesis

Determining whether AI affects brand image is complex, involving multiple constraints, variables, and layers of analysis. To address this, four key research questions have been developed, each accompanied by one or two hypothesis statements. These hypotheses are tested using statistical analysis, ensuring a well-balanced study that provides empirical evidence to answer the research questions.

The research questions are as follows:

RQ1) How do consumer perceptions of AI on metrics like seamlessness and understanding capability influence attitudes and satisfaction?

RQ2) What role does perceived empathy play in mediating AI's influence during service failures or successes?

RQ3) How does AI integration in customer service impact brand perceptions?

RQ4) What generational differences or similarities exist between millennials and Gen Z regarding AI affinity and emotional engagement?

Research Question (RQ)	Hypothesis (H)	Hypothesis Statement
RQ1: How do consumer perceptions of AI on metrics like seamlessness and understanding capability influence attitudes and satisfaction?	H1	The understanding capability of AI applications significantly influences customer satisfaction.
RQ2: What role does perceived empathy play in mediating AI's influence during service failures or successes?	H2	Perceived lack of empathy in AI reduces satisfaction.
	H3	Empathy from AI plays a significant role in customer satisfaction.
RQ3: How does AI-driven customer service impact brand perception?	H4	A positive experience with AI customer service significantly correlates with a favourable shift in brand perception.
	H5	Customers have higher loyalty towards brands that use human agents versus AI agents for customer service.
	H6	There is a direct relationship between the empathy and efficiency of AI customer service and how customers perceive a brand's image.
RQ4: What generational differences or similarities exist between millennials and Gen Z regarding AI affinity and emotional engagement?	H7	The interaction frequency with AI customer service is significantly higher for Gen Z (18-24) compared to Millennials (25-34).
	H8	Gen Z exhibits a significantly higher degree of brand loyalty compared to Millennials when engaging with brands that implement AI in customer service.

## Methodology

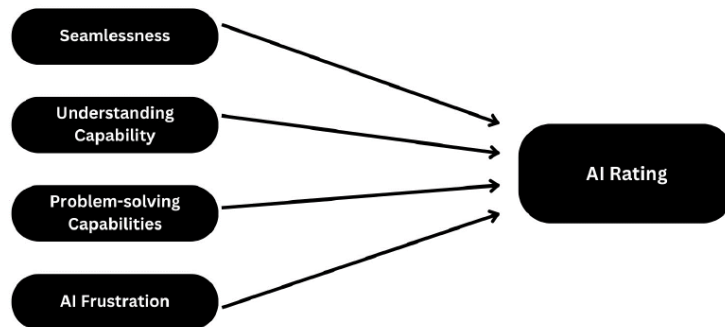
A quantitative, cross-sectional survey design was implemented for this study. Independent and dependent variables were identified from the collected data, with relevant variables selected for each hypothesis to perform appropriate statistical tests. Data collected via SurveyMonkey was initially loaded and explored in Excel to ensure validity and check for any necessary cleaning or preprocessing. Once prepared, the data was loaded into SPSS, where each statistical test was conducted.

To analyze the data, methods such as regression analysis, ANOVA, correlation, and t-tests were employed. These statistical techniques are foundational in marketing research, providing robust tools for extracting meaningful insights from complex datasets. Their application ensured a rigorous analysis, enabling the study to accurately assess the relationships between AI customer service experiences, brand perception, and customer loyalty.

The tests designed for each are as follows

H1 -Regression analysis and ANOVA test

**RQ1 ) How do consumer perceptions of AI on metrics like seamlessness and understanding capability influence attitudes and satisfaction?**



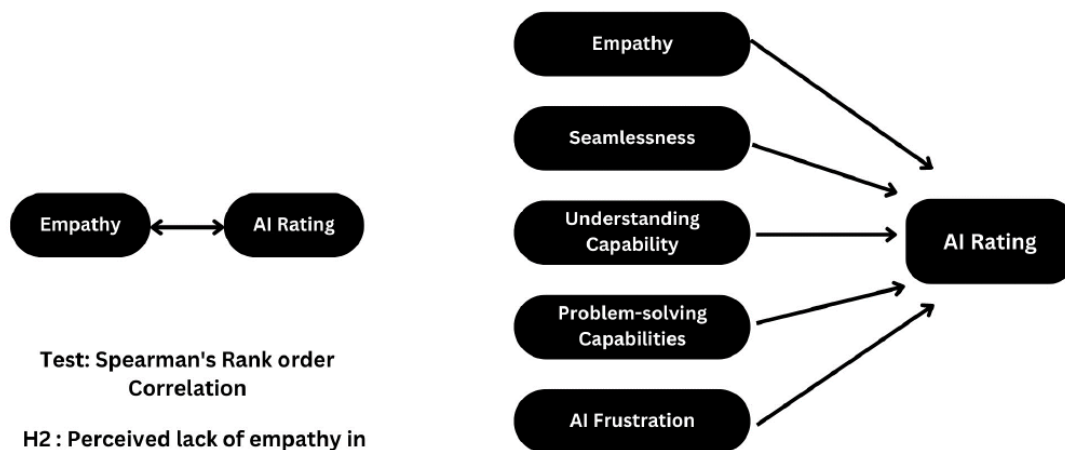
Tests: Regression Analysis and ANOVA test

H1: The understanding capability of AI applications significantly influences customer satisfaction.

H2 – Spearman’s rank order correlation

H3 – Multiple linear regression

**RQ2 ) What role does perceived empathy play in mediating AI's influence during service failure or successes?**



Test: Spearman's Rank order Correlation

H2 : Perceived lack of empathy in AI reduces satisfaction

Test: Multiple Linear Regression

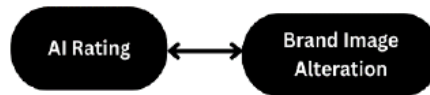
H3 : Empathy from AI plays a significant role in customer satisfaction

H4 – Pearson correlation and linear regression

H5 – Chi squared test, independent t-test and one way ANOVA

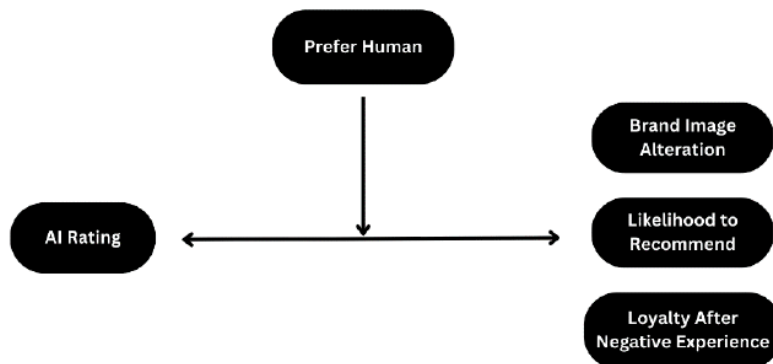
H6 – Correlation and one -way ANOVA

**RQ 3) How does AI integration in customer service impact brand personality and loyalty perceptions?**



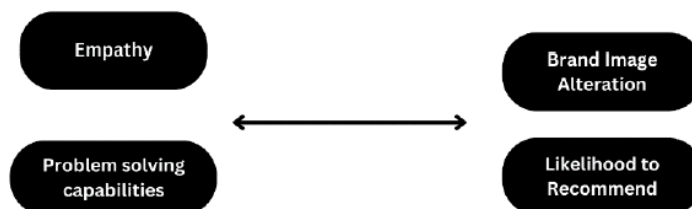
Test: Pearson Correlation and Linear Regression

H4: A positive customer service with AI is directly linked to the change in the brand perception.



Test: Chi-squared test, independent samples t-test and one-way ANOVA

H5: Customers have higher loyalty towards brands that use human agents versus AI agents for customer service.



Test: Correlation and One-way ANOVA

H6: There is a direct relationship between the empathy and efficiency of AI customer service and how customers perceive a brand's image

H7 – independent samples t-test

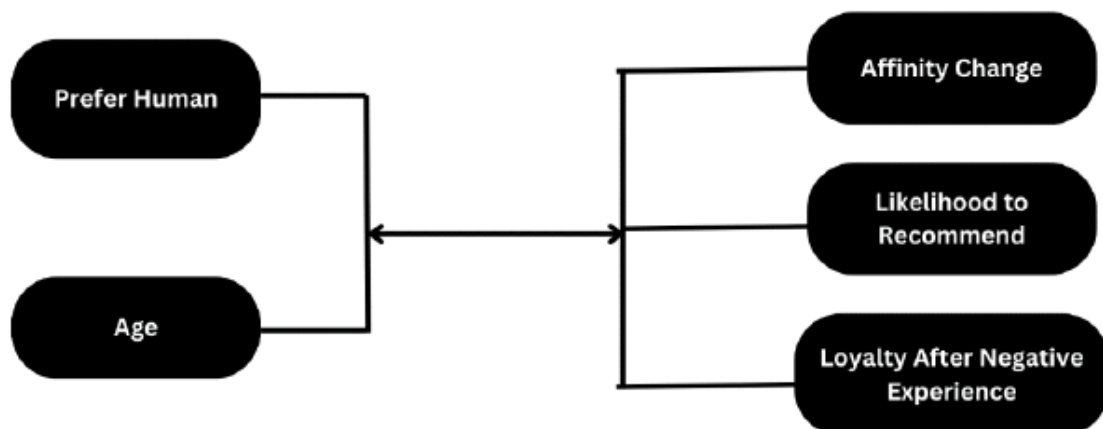
H8 – Chi squared test, independent samples t-test and two-way Anova

**RQ4) What generational differences exist between millennial and Gen Z regarding AI affinity and emotional engagement?**



Test: Independent samples t-test

**H7: The interaction frequency with AI customer service is significantly higher for Gen Z (18-24) compared to millennials (25-34).**



Test: Chi-squared test, independent samples t-test and two-way ANOVA

**H8: Gen Z exhibits a significantly higher degree of brand loyalty compared to millennials when engaging with brands that implement AI in customer service.**

## Results

Hypothesis	Tests	Variables	Results
H1	Regression Analysis and ANOVA test	Independent Variables: Perceived Seamlessness, Understanding, Frustration Level, Problem Resolution Capability Dependent Variable: AI Satisfaction Rating (AI_Rating)	<p>Regression Analysis: - R-squared = 0.301 (30.1% variance explained) - Perceived Understanding: <math>\beta = 0.281</math>, <math>p = 0.033</math> (Significant) - Problem Resolution: <math>\beta = 0.224</math>, <math>p = 0.066</math> (Marginally significant) - Perceived Seamlessness: <math>\beta = 0.116</math>, <math>p = 0.308</math> (Not significant) - Frustration Level: <math>\beta = -0.159</math>, <math>p = 0.164</math> (Not significant)</p> <p>ANOVA Results: - Understanding: <math>p &lt; 0.001</math>, <math>\eta^2 = 0.268</math>, <math>\omega^2 = 0.229</math> - Problem Resolution: <math>p &lt; 0.001</math> (Significant) - Seamlessness: <math>p = 0.003</math> (Significant) - Frustration Level: <math>p = 0.098</math> (Not significant)</p>
H2	Spearman's Rank-Order Correlation	Independent Variable: AI Empathy (AI_empathy) Dependent Variable: AI Satisfaction Rating (AI_Rating)	<p>Spearman's Correlation: - <math>r_s = 0.415</math>, <math>p &lt; 0.001</math> Moderate positive correlation indicating that higher perceived empathy is associated with higher AI satisfaction.</p> <p>The result is statistically significant, suggesting that incorporating empathy in AI systems improves customer satisfaction.</p>
H3	Multiple Linear Regression	Independent Variables: Seamlessness, Understanding, Frustration, Resolution, Empathy Dependent Variable: AI Satisfaction Rating (AI_Rating)	<p>Regression Analysis: - R-squared = 0.346 (34.6% variance explained) - Empathy: <math>B = 0.177</math>, <math>p = 0.045</math> (Significant) - Understanding: <math>r = 0.473</math>, <math>p &lt; 0.001</math> (Correlation significant, regression <math>p = 0.075</math>) –</p> <p>Other factors showed weaker correlations and insignificant coefficients. Empathy is the strongest predictor of AI satisfaction, followed by perceived understanding. Improving AI's empathy capabilities is key to enhancing customer satisfaction.</p>

H4	Pearson Correlation and Linear Regression	Independent Variable: AI Satisfaction Rating (AI_Rating) Dependent Variable: Brand Perception Change	Regression Analysis: - R-squared = 0.204 (20.4% variance explained) - $F(1,84) = 21.483$ , $p < 0.001$ Positive AI ratings significantly predict favorable brand perception change.  Pearson Correlation: - $r = 0.451$ , $p < 0.001$ Moderate positive correlation between AI satisfaction and brand perception change, supporting a linkage between AI quality and improved brand image.
H5	Chi-Squared Test, Independent Samples t-Test, One-Way ANOVA	Independent Variable: Preference for Human vs. AI Agents Dependent Variable: Customer Loyalty (Brand Affinity, AI Rating, Recommendation Likelihood)	Chi-Squared Test: - $\chi^2(6) = 5.298$ , $p = 0.506$ (Not significant)  Independent Samples t-Test: - No significant difference in AI rating, brand perception change, or brand affinity (all $p > 0.05$ ) - Effect sizes negligible (Cohen's $d = 0.857-1.153$ )  One-Way ANOVA: - $F(1,84) = 10.102$ , $p = 0.002$ - Effect size: $\eta^2 = 0.107$ The hypothesis that human agents increase loyalty is not supported by this data. Further research is needed.
H6	Correlation and One-Way ANOVA	Independent Variables: AI Empathy, AI Efficiency Dependent Variable: Brand Perception Change	Correlation Analysis: - Coefficients range from 0.258 to 0.494 (Weak to moderate correlation) One-Way ANOVA: - $F = 4.961$ , $p < 0.001$ - Effect size: 31.4% variance explained  Multiple Regression Analysis: - R-squared = 0.290 (29.0% variance explained) –  AI Efficiency: Significant positive effect - AI Empathy: Marginally significant positive effect AI efficiency is the strongest driver of brand perception change; empathy also contributes positively.
H7	Independent Samples t-Test	Independent Variable: AI Interaction Frequency Groups: Gen Z (18-24) vs. Millennials (25-34)	Independent Samples t-Test: - Gen Z: $M = 3.90$ , $SD = 1.37$ -

		Dependent Variable: AI Interaction Frequency	<p>Millennials: <math>M = 3.12</math>, <math>SD = 1.36</math> - <math>t(83) = -0.280</math>, <math>p = 0.390</math></p> <p>No significant difference in AI interaction frequency between Gen Z and Millennials. Hypothesis not supported. Further research needed to explore generational interaction patterns.</p>
H8	Chi-Squared Test, Independent Samples t-Test, Two-Way ANOVA	Independent Variable: AI Usage by Brand Groups: Gen Z (18-24) vs. Millennials (25-34) Dependent Variable: Brand Loyalty (Recommendation Likelihood)	<p>Chi-Squared Test: - <math>\chi^2(6) = 2.346</math>, <math>p = 0.885</math> (Not significant)</p> <p>Independent Samples t-Test: - Gen Z: <math>M = 3.85</math>, <math>SD = 1.72</math> - Millennials: <math>M = 3.75</math>, <math>SD = 1.51</math> - <math>t(84) = 0.107</math>, <math>p = 0.458</math></p> <p>Two-Way ANOVA: - <math>F(1,82) = 1.234</math>, <math>p = 0.270</math> - Age effect: <math>F(1,82) = 1.160</math>, <math>p = 0.285</math></p> <p>No significant difference in brand loyalty between Gen Z and Millennials. Hypothesis not supported. Additional research recommended.</p>

## Conclusion

The study highlights the significant role of AI's understanding capability and seamlessness in enhancing customer satisfaction. While AI efficiency is appreciated, the lack of perceived empathy can negatively impact customer experiences. The findings reveal that both Gen Z and millennials exhibit similar frequencies of AI interaction and comparable levels of brand loyalty, challenging common generational assumptions. Positive AI experiences are shown to strengthen brand perception and loyalty, emphasizing that even minor enhancements in AI empathy can amplify customer satisfaction. However, the study also underscores that a human-like touch in interactions remains crucial for building trust and maintaining customer relationships. Although AI's efficiency in resolving issues is valued, integrating empathy into AI systems significantly improves customer perceptions of service quality. As brands continue to evolve their AI strategies, balancing technological efficiency with emotional connection is vital. Fostering empathy and understanding within AI interactions will be key to improving customer satisfaction and enhancing brand loyalty in the digital age.

This research enriches the understanding of AI in customer service, challenging assumptions about generational preferences and emphasizing the under-explored importance of empathy in AI. Practically, it offers brands valuable insights to enhance AI strategies by balancing technological efficiency with emotionally resonant interactions. The focus should extend beyond technological prowess to creating meaningful, empathetic customer experiences. In conclusion, as technology advances, we must consider: ***Can machines think?***