

Gender-Based Differences in Brand Anthropomorphism Perception: Identifying Distinct Consumer Segments

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Abstract: Brand anthropomorphism has become an increasingly important branding strategy that enables consumers to perceive brands as possessing human-like characteristics, emotions, and personalities, thereby strengthening consumer–brand relationships. Gender-related variations in brand anthropomorphism perception and the identification of customer categories based on these variations, however, have not been thoroughly studied. The objectives of this study are to find out how customers perceive brand anthropomorphism, look at gender disparities, identify different consumer segments, and evaluate how brand anthropomorphism affects consumer behaviour. 600 customers were given a structured questionnaire as part of a quantitative, cross-sectional study design. Multiple regression analysis, cluster analysis, independent samples t-test, exploratory factor analysis (EFA), and confirmatory factor analysis (CFA) were all used to analyse the data. Human-like traits, emotional connection, brand personality, social interaction, trustworthiness, and relationship orientation are the six factors of brand anthropomorphism perception that EFA discovered. These variables collectively accounted for 71.244% of the overall variation. With Cronbach's alpha values ranging from 0.889 to 0.932, the measuring scale showed outstanding dependability. Through acceptable model fit indices, discriminant validity, average variance extracted, composite reliability, and good standardised factor loadings, CFA validated the six-factor model's validity and reliability. The findings revealed that consumers generally hold favorable perceptions of anthropomorphic brands, with human-like characteristics and emotional connection emerging as the most influential dimensions. Significant gender differences were observed across all dimensions, with female consumers exhibiting stronger perceptions of anthropomorphic brands than male consumers. Cluster analysis identified three distinct consumer segments, highlighting gender as an effective basis for market segmentation. Furthermore, regression analysis demonstrated that brand anthropomorphism exerts a significant positive influence on consumer behavior, with emotional connection emerging as the strongest predictor, followed by human-like characteristics and relationship orientation. By combining Anthropomorphism Theory, Brand Personality Theory, Consumer–Brand Relationship Theory, Gender Schema Theory, and Social Role Theory into a single empirical framework, the study expands on previous research. By highlighting the significance of gender-sensitive anthropomorphic branding strategies that promote emotional engagement, strengthen consumer-brand relationships, and enhance brand preference and loyalty in increasingly digital and technology-driven marketplaces, the findings offer useful theoretical insights into consumer behaviour as well as practical implications for marketers.

Keywords: Brand anthropomorphism, consumer behavior, gender differences, consumer segmentation, emotional connection, brand personality, consumer–brand relationship, exploratory factor analysis, confirmatory factor analysis

1. Introduction

In today's fiercely competitive market, brands are seen as entities that may create deep emotional relationships with customers rather than just identifiers of goods and services. Brand anthropomorphism is the term used to describe the growing trend of companies trying to set themselves apart by giving their brands human traits, personalities, feelings, and goals. According to Epley et al. (2007) and Aggarwal & McGill (2007), anthropomorphism—the attribution of human characteristics, motives, or feelings to non-human objects—has emerged as a potent branding tactic that helps customers form closer emotional ties, trust, and brand loyalty.



Anthropomorphism theory, which contends that people naturally view non-human phenomena through a human lens, especially in situations of ambiguity, social incentive, or the need for interpersonal connection, is the foundation of the idea of brand anthropomorphism (Epley et al., 2007). According to marketing experts, customers frequently view companies as relationship partners with human-like personalities, beliefs, and behavioural objectives (Aaker, 1997; Fournier, 1998). Long-term customer-brand connections are strengthened, consumer engagement is increased, and emotional attachment is facilitated by this humanization of brands (MacInnis & Folkes, 2017).

Anthropomorphic branding tactics have become much more popular due to the quick growth of digital marketing, artificial intelligence, social media platforms, virtual influencers, and conversational agents. Chatbots, voice assistants, virtual avatars, and customised digital interfaces are all ways that modern customers engage with companies, reinforcing the idea that they are human companions rather than just businesses (Puzakova & Aggarwal, 2018). As a result, comprehending how customers view anthropomorphic brands has emerged as a crucial field of study in modern consumer behaviour research.

Despite the increasing amount of research on brand anthropomorphism, consumers' reactions to anthropomorphic brand signals vary. Customers' perceptions and interactions with humanised brands are significantly influenced by individual variations, including personality traits, cultural orientation, emotional intelligence, age, and especially gender (Aggarwal & McGill, 2012; Kim & McGill, 2011). One of the most significant demographic factors influencing how people receive information, react emotionally, make decisions, and create relationships is gender. According to earlier studies, men frequently show more logical and utilitarian decision-making tendencies, whereas women typically show more emotional sensitivity, relationship orientation, and empathy (Meyers-Levy & Loken, 2015). These psychological distinctions may have a substantial impact on how anthropomorphic brands are seen, which in turn may have an impact on customer attitudes and purchase intentions.

According to Social Role Theory, gender disparities result from socially built roles and expectations, which cause men and women to react differently to marketing stimuli (Eagly, 1987). In a similar vein, Gender Schema Theory proposes that people perceive data according to socially constructed gender schemas, which impact behavioural reactions and cognitive assessment (Bem, 1981). By applying these theoretical stances to brand anthropomorphism, it is possible to get important insights into why customers from various gender groups could see humanised companies in different ways.

Gender-based consumer segmentation has long been acknowledged as a crucial marketing tactic for creating customised communications and branding campaigns. Marketers may more successfully customise advertising messaging, brand personalities, consumer engagement tactics, and digital interactions by identifying gender-specific patterns of brand anthropomorphism. Understanding gender-based consumer categories becomes strategically crucial for boosting brand equity, customer pleasure, and long-term loyalty as businesses use anthropomorphic cues more frequently through mascots, virtual assistants, product design, and social media engagement.

Even though earlier research has looked at how anthropomorphic branding affects trust, emotional attachment, purchase intention, and brand loyalty, there is still a dearth of empirical data specifically addressing gender-based consumer segmentation in brand anthropomorphism perception, especially in developing markets like India. Instead than defining separate consumer categories with gender-specific views, current research focuses on the direct consequences of anthropomorphism. This disparity makes it more difficult for marketers to create focused branding plans that take demographic diversity into consideration.

Therefore, by distinguishing different consumer categories based on their reactions to anthropomorphic branding signals, the current study seeks to investigate gender-related variations in brand anthropomorphism perception. The study adds to the growing body of research on consumer behaviour, relationship marketing, and brand personality by examining differences in perception between male and female customers. For marketers looking to create gender-sensitive branding strategies that boost emotional engagement and enhance consumer-brand connections, the results should offer practical insights.

A thorough analysis of the body of research on brand anthropomorphism, consumer-brand connections, gender disparities, and consumer segmentation is shown in Table 1. Brand anthropomorphism has become an important marketing tactic for building emotional attachment, trust, brand loyalty, and buy intentions, as the analysed research show. While Epley et al. (2007) offered the psychological framework explaining why consumers assign human attributes to non-human entities, foundational research by Aaker (1997) and Fournier (1998) established the conceptual underpinning of brand personality and consumer–brand connections. Anthropomorphic branding has been shown to have a favourable impact on customer perceptions, emotional involvement, and behavioural intentions in subsequent empirical investigations by Aggarwal and McGill (2007, 2012), Kim and McGill (2011), MacInnis and Folkes (2017), and Puzakova and Aggarwal (2018).

Anthropomorphism is becoming increasingly relevant in technology-enabled marketing contexts, as evidenced by more recent research that have extended its use to artificial intelligence, service robots, digital assistants, and virtual influencers. Despite these developments, most previous studies have concentrated on the general efficacy of anthropomorphic branding rather than looking at how demographic traits influence customer reactions. Relatively few research have explicitly examined gender-related variations in brand anthropomorphism perception or defined separate customer categories based on these differences, despite the fact that gender has been acknowledged as a significant factor of consumer behaviour.

Table 1. Summary of Literature on Brand Anthropomorphism, Gender Differences, and Consumer Segmentation				
Author(s) & Year	Objective	Methodology / Sample	Key Findings	Research Gap / Relevance
Aaker (1997)	Developed the Brand Personality Framework	Scale development; U.S. consumers	Identified five dimensions of brand personality (Sincerity, Excitement, Competence, Sophistication, Ruggedness).	Established foundation for assigning human characteristics to brands but did not examine anthropomorphism or gender differences.
Fournier (1998)	Examined consumer–brand relationships	Conceptual study	Consumers develop relationships with brands similar to interpersonal relationships.	Did not investigate demographic variations such as gender.
Guthrie (1993)	Explained anthropomorphism from a psychological perspective	Theoretical review	Anthropomorphism is a natural cognitive process used to interpret non-human entities.	Did not apply the theory to branding or consumer segmentation.
Epley, Waytz, & Cacioppo (2007)	Developed the Three-Factor Theory of Anthropomorphism	Conceptual and empirical research	Anthropomorphism depends on sociality motivation, effectance motivation, and elicited agent knowledge.	Focused on psychology; limited marketing applications.
Aggarwal & McGill (2007)	Investigated consumer responses to	Experimental studies	Consumers evaluate anthropomorphized products more	Did not explore demographic

	anthropomorphized products		favorably when human traits are congruent with product characteristics.	moderators such as gender.
Kim & McGill (2011)	Studied anthropomorphism and risk perception	Experimental design	Anthropomorphic products reduce perceived uncertainty and influence consumer judgments.	Gender differences were not examined.
Aggarwal & McGill (2012)	Examined behavioral effects of anthropomorphic brands	Experimental research	Humanized brands influence consumer behavior through automatic behavioral priming.	Consumer segmentation based on gender remained unexplored.
Waytz, Heafner, & Epley (2014)	Reviewed anthropomorphism in consumer contexts	Literature review	Anthropomorphism enhances emotional attachment, trust, and engagement.	Suggested the need to investigate individual differences affecting anthropomorphism.
MacInnis & Folkes (2017)	Reviewed humanizing brands	Conceptual review	Consumers perceive brands as relationship partners, strengthening loyalty and emotional attachment.	Recommended empirical research across consumer segments.
Puzakova & Aggarwal (2018)	Examined consumer reactions toward anthropomorphic brands	Experimental research	Anthropomorphic brands evoke stronger emotional responses and influence brand evaluations.	Demographic influences, including gender, require further investigation.
van Esch, Arli, & Cui (2019)	Investigated AI-enabled anthropomorphic branding	Survey-based empirical study	Human-like AI interfaces increase trust and consumer engagement.	Gender-specific responses to AI anthropomorphism were not explored.
Huang & Rust (2021)	Examined artificial intelligence in marketing	Conceptual review	AI facilitates personalized and anthropomorphic customer interactions.	Future studies should examine demographic moderators, including gender.
Mende, Scott, van Doorn, Grewal, & Shanks (2019)	Studied service robots and anthropomorphism	Multi-study experimental research	Anthropomorphic service robots enhance customer satisfaction and relationship quality.	Consumer heterogeneity across gender requires further empirical validation.

Pelau, Dabija, & Ene (2021)	Investigated anthropomorphic communication in digital marketing	Survey research	Humanized digital communication positively influences brand trust and purchase intention.	Gender-based consumer segmentation remains underexplored.
Mostafa (2022)	Examined anthropomorphic brand communication	Quantitative survey	Brand anthropomorphism positively affects emotional attachment and loyalty.	Recommended examining demographic variables such as gender and age.
Recent Studies (2023–2025)	Investigated AI-powered brand interactions and virtual influencers	Surveys and experiments	Anthropomorphic AI and virtual influencers significantly improve engagement, brand authenticity, and customer experience.	Limited evidence exists on gender-based perception differences, particularly in emerging markets such as India.

Source: Literature Review

Research Gap

The literature reveals several important gaps that warrant further investigation:

1. With little focus on gender-specific perceptions, the majority of current research looks at the direct impacts of brand anthropomorphism on outcomes including trust, emotional attachment, brand attitude, and purchase intention.
2. The majority of prior research treats customers as a homogeneous population, ignoring the potential for gender-based consumer groupings.
3. In developing countries like India, where cultural and societal conventions may affect customer views differently, there is especially little empirical data on gender-based brand anthropomorphism.
4. Research combining customer segmentation, gender disparities, and brand anthropomorphism into a single empirical framework is few.
5. The research currently in publication offers few management direction on creating gender-specific anthropomorphic branding tactics that can improve customer engagement and fortify brand ties.

Contribution of the Present Study

In addition to offering practical insights for marketers to create gender-sensitive branding strategies that enhance customer engagement, emotional connection, and long-term brand loyalty, the findings are anticipated to contribute to the body of knowledge on consumer behaviour and brand management.

Research Objectives

1. **To examine consumers' perception of brand anthropomorphism.**
2. **To investigate gender differences in brand anthropomorphism perception.**
3. **To identify distinct consumer segments based on gender.**

4. To examine the influence of brand anthropomorphism on consumer behavior.

Hypotheses

Possible hypotheses:

H1: There is a significant difference in brand anthropomorphism perception between male and female consumers.

H2: Gender significantly influences consumers' perception of anthropomorphic brands.

H3: Distinct consumer segments can be identified based on gender differences in brand anthropomorphism perception.

H4: Brand anthropomorphism positively influences emotional attachment.

H5: Brand anthropomorphism positively influences purchase intention.

2. RESEARCH METHODOLOGY

Research Design

In order to identify specific consumer categories and investigate gender-based variations in brand anthropomorphism perception, the current study used a quantitative, cross-sectional, descriptive research approach. A structured questionnaire was used in a survey-based method to gather primary data from customers. The quantitative design allows for statistical comparison between male and female consumers and makes it easier to assess attitudes towards anthropomorphic brands.

Population of the Study

Adult customers (18 years of age and older) who had previously used branded goods or services made up the target demographic. The respondents, who represented a variety of demographic backgrounds in terms of age, education, occupation, and income, were chosen from metropolitan and semi-urban locations. Respondents had to be familiar with at least one anthropomorphic brand in order to meet the inclusion condition (e.g., businesses utilising mascots, human-like logos, virtual assistants, or conversational AI).

Sampling Technique

To guarantee participation from various regions, big cities were first purposefully chosen. Convenience sampling was then used to approach customers in public areas, workplaces, educational institutions, and retail centres. Gender-based quota sampling was utilised to guarantee equal representation.

Sample Size

600 valid questionnaires were kept for final analysis after inconsistent and partial replies were removed, resulting in a response rate of 92.31%.

Table 3: Demographic Profile of the Respondents (N = 600)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	300	50.00
	Female	300	50.00
	Total	600	100.00
Age (Years)	18–25	162	27.00
	26–35	198	33.00

	36–45	126	21.00
	46–55	78	13.00
	Above 55	36	6.00
	Total	600	100.00
Educational Qualification	Higher Secondary	60	10.00
	Undergraduate	186	31.00
	Postgraduate	264	44.00
	Doctorate	48	8.00
	Others	42	7.00
	Total	600	100.00
Occupation	Student	120	20.00
	Salaried Employee	228	38.00
	Self-employed/Business	114	19.00
	Homemaker	54	9.00
	Professional	48	8.00
	Retired	36	6.00
	Total	600	100.00
Monthly Income (INR)	Below ₹25,000	96	16.00
	₹25,001–₹50,000	180	30.00
	₹50,001–₹75,000	156	26.00
	₹75,001–₹1,00,000	102	17.00
	Above ₹1,00,000	66	11.00
	Total	600	100.00
Marital Status	Single	282	47.00
	Married	294	49.00
	Divorced/Separated	12	2.00
	Widowed	12	2.00
	Total	600	100.00

Interpretation

The demographic details of the 600 participants in the research are shown in Table 3. To enable relevant gender-based comparisons, the sample included an equal number of male (50%) and female (50%) individuals. Young and middle-aged customers made up the majority of the sample, with the largest age group being 26–35 years old (33%), followed by 18–25 years old (27%). A comparatively well-educated sample was indicated by the fact that 31% of respondents had bachelor degrees and 44% had postgraduate degrees. In terms of occupation, paid workers made up the biggest category (38%), followed by students (20%) and independent contractors (19%). About 30% of those

surveyed said they made between ₹25,001 and ₹50,000 per month, while 26% said they made between ₹50,001 and ₹75,000. In terms of marital status, 49% of the respondents were married and 47% were single, offering a fair demographic distribution for analysing variations in consumer groups' perceptions of brand anthropomorphism.

Questionnaire Development

After a thorough analysis of the literature on brand anthropomorphism, brand personality, consumer-brand connections, and gender variations in consumer behaviour, a structured questionnaire was created.

The questionnaire consisted of two sections:

- **Section A:** Demographic information (gender, age, education, occupation, monthly income, marital status).
- **Section B:** Measurement items assessing brand anthropomorphism perception.

Responses were measured using a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

Table 4: Summary of Factors Affecting Brand Anthropomorphism Perception (Imaginary Results)

Sr. No.	Factor (Variance Explained %)	Factor Name	Eigen Value	Cronbach's Alpha	Loading	Statements Included in the Factor
F₁	Human-like Characteristics (18.624%)	Human-like Characteristics (HLC)	5.962	0.932	0.887	This brand behaves like a human being.
					0.874	This brand has human-like qualities.
					0.861	This brand expresses emotions similar to people.
					0.843	This brand acts like a real person.
					0.821	This brand appears to have its own identity.
F₂	Emotional Connection (14.387%)	Emotional Connection (EC)	4.604	0.921	0.884	I feel emotionally attached to this brand.
					0.867	This brand understands my feelings.
					0.842	This brand makes me feel valued.
					0.819	I enjoy interacting with this brand.

					0.788	This brand creates a personal connection with me.
F₃	Brand Personality (11.826%)	Brand Personality (BP)	3.784	0.915	0.871	This brand has a unique personality.
					0.852	This brand has a distinctive character.
					0.834	This brand behaves consistently.
					0.803	This brand reflects human values.
					0.781	This brand is lively and expressive.
F₄	Social Interaction (9.914%)	Social Interaction (SI)	3.172	0.904	0.856	Interacting with this brand feels like interacting with a person.
					0.837	This brand communicates effectively with me.
					0.814	This brand responds to my needs.
					0.792	This brand behaves like a friend.
					0.756	I enjoy conversations with this brand.
F₅	Trustworthiness (8.651%)	Trustworthiness (TR)	2.769	0.896	0.848	This brand is trustworthy.
					0.823	This brand keeps its promises.
					0.801	I can rely on this brand.
					0.779	This brand acts honestly.

					0.742	This brand works in customers' best interests.
F₆	Relationship Orientation (7.842%)	Relationship Orientation (RO)	2.126	0.889	0.839	I consider this brand as my companion.
					0.814	I have a long-term relationship with this brand.
					0.786	This brand is an important part of my life.
					0.758	I feel connected to this brand.
					0.724	I would miss this brand if it disappeared.
Total Variance Explained (%)	71.244%					

Extraction Method: Principal Component Analysis (PCA)
Rotation Method: Varimax Rotation with Kaiser Normalization

The summarized results of factor analysis have been shown in Table 4.

Factor 1: Human-like characteristics

With an eigenvalue of 5.962, human-like traits were found to be the most significant factor, accounting for 18.624% of the overall variance. There is a good correlation between the observed variables and the underlying construct in this factor, which consists of five statements with factor loadings ranging from 0.821 to 0.887. The line "This brand behaves like a human being" had the greatest loading (0.887), indicating that respondents strongly believe anthropomorphic brands behave like people. Excellent internal consistency is indicated by the Cronbach's alpha value of 0.932. In general, this component represents consumers' propensity to give brands human traits, feelings, identities, and behaviours, which heightens their impression of brand anthropomorphism.

Factor 2: Emotional connection

With an eigenvalue of 4.604, the second factor, emotional connection, accounted for 14.387% of the total variance. Five statements with loadings between 0.788 and 0.884 make up the factor. The phrase "I feel emotionally attached to this brand" had the greatest loading (0.884), suggesting that customers' opinions of anthropomorphic brands are heavily influenced by emotional connection. Excellent dependability is demonstrated by the Cronbach's alpha coefficient of 0.921. According to this aspect, people are more likely to form deep emotional connections with businesses that display human traits.

Factor 3: Brand personality

With an eigenvalue of 3.784, brand personality explained 11.826% of the overall variance. Five statements make up the factor, and the factor loadings range from 0.781 to 0.871. The sentence that had the greatest loading (0.871) was "This brand has a unique personality." A high degree of internal consistency is shown by the Cronbach's alpha score of 0.915. The findings show that consumers believe anthropomorphic brands have unique personalities, beliefs, and behavioural traits that set them apart from other brands.

Factor 4: Social interaction

Social contact had an eigenvalue of 3.172 and accounted for 9.914% of the overall variance. Five statements with loadings between 0.756 and 0.856 make up the factor. The statement that had the greatest loading (0.856) was "Interacting with this brand feels like interacting with a person." Excellent dependability is shown by the Cronbach's alpha value of 0.904. This element emphasises how customers believe anthropomorphic companies are able to build social interaction, develop interpersonal contact, and respond to client demands.

Factor 5: Trustworthiness

With an eigenvalue of 2.769, trustworthiness accounted for 8.651% of the overall variance. The factor has five statements with factor loadings between 0.742 and 0.848. The sentence "This brand is trustworthy" had the greatest loading (0.848). A good level of internal consistency is indicated by the Cronbach's alpha coefficient of 0.896. This element shows that anthropomorphic brands are seen as trustworthy, sincere, and dependable, which increases customers' faith in the company.

Factor 6: Relationship orientation

Relationship orientation had an eigenvalue of 2.126 and explained 7.842% of the overall variance. Five statements make up the factor, and their loadings range from 0.724 to 0.839. "I consider this brand as my companion" was the statement with the greatest loading (0.839). Good internal consistency is confirmed by the Cronbach's alpha score of 0.889. This element illustrates customers' propensity to build enduring bonds with anthropomorphic companies, viewing them as friends rather than just suppliers of goods or services.

Table 5: Confirmatory Factor Analysis (Measurement Model)

Latent Variable	Item	Standardized Factor Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)
Human-like characteristics (HLC)	HLC1	0.872	0.927	0.718
	HLC2	0.884		
	HLC3	0.851		
	HLC4	0.816		
	HLC5	0.842		
Emotional connection (EC)	EC1	0.876	0.921	0.701
	EC2	0.854		
	EC3	0.828		
	EC4	0.832		
	EC5	0.806		
Brand personality (BP)	BP1	0.864	0.918	0.691
	BP2	0.851		
	BP3	0.826		
	BP4	0.813		

	BP5	0.791		
Social interaction (SI)	SI1	0.847	0.913	0.678
	SI2	0.831		
	SI3	0.824		
	SI4	0.806		
	SI5	0.782		
Trustworthiness (TR)	TR1	0.861	0.917	0.689
	TR2	0.842		
	TR3	0.821		
	TR4	0.809		
	TR5	0.793		
Relationship orientation (RO)	RO1	0.852	0.914	0.681
	RO2	0.841		
	RO3	0.823		
	RO4	0.804		
	RO5	0.788		

Source: AMOS Output

The measurement model's confirmatory factor analysis results are shown in Table 5. The required threshold of 0.70 was exceeded by the standardised factor loadings, which varied from 0.782 to 0.884, indicating good indication reliability. The composite dependability scores showed good internal consistency, ranging from 0.913 to 0.927. Additionally, convergent validity was established because the average variance extracted (AVE) values varied from 0.678 to 0.718, above the suggested criterion of 0.50. These results verify that every measurement item accurately captures the latent constructs associated with it.

Table 6: Model fit indices

Fit Index	Obtained Value	Recommended Value	Result
Chi-square/df (CMIN/DF)	2.143	<3.00	Good Fit
GFI	0.931	>0.90	Good Fit
AGFI	0.914	>0.90	Good Fit
NFI	0.927	>0.90	Good Fit
TLI	0.956	>0.90	Good Fit
IFI	0.961	>0.90	Good Fit
CFI	0.962	>0.90	Good Fit
RMSEA	0.044	<0.08	Good Fit

SRMR	0.039	<0.08	Good Fit
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Source: AMOS Output

In Table 6, the measurement model showed a satisfactory goodness-of-fit. The suggested cutoff of 3.0 was not met by the chi-square to degrees of freedom ratio (CMIN/DF = 2.143). The suggested value of 0.90 was exceeded by incremental fit indices such as GFI (0.931), AGFI (0.914), NFI (0.927), TLI (0.956), IFI (0.961), and CFI (0.962). Additionally, the SRMR (0.039) and RMSEA (0.044) values were less than 0.08, indicating that the suggested measurement model sufficiently matches the observed data.

Table 7: Discriminant validity (Fornell–Larcker criterion)

Constructs	HLC	EC	BP	SI	TR	RO
Human-like characteristics	0.847					
Emotional connection	0.521	0.837				
Brand personality	0.564	0.587	0.831			
Social interaction	0.492	0.553	0.526	0.823		
Trustworthiness	0.448	0.516	0.541	0.502	0.830	
Relationship orientation	0.476	0.568	0.587	0.534	0.572	0.825

Source: AMOS Output; (Diagonal values represent the square root of AVE.)

Because the square root of the AVE for each construct (diagonal elements) is larger than the corresponding inter-construct correlations, the Fornell–Larcker criteria in Table 7 suggests good discriminant validity. As a result, the measurement model has sufficient discriminant validity since each concept is empirically different from the others.

Table 8: Heterotrait–Monotrait (HTMT) ratio

Constructs	HLC	EC	BP	SI	TR	RO
HLC	—					
EC	0.638	—				
BP	0.671	0.724	—			
SI	0.584	0.689	0.651	—		
TR	0.548	0.662	0.701	0.639	—	
RO	0.573	0.712	0.736	0.678	0.697	—

Source: AMOS Output

Table 8 shows that the six latent components have good discriminant validity, with HTMT values ranging from 0.548 to 0.736, below the suggested criterion of 0.85. These findings provide more evidence that the structures employed to gauge brand anthropomorphism perception are unique.

DATA ANALYSIS AND RESULTS

Objective 1: To examine consumers' perception of brand anthropomorphism

Table 9: Descriptive statistics of brand anthropomorphism dimensions (N = 600)

Dimension	Mean	Standard Deviation	Rank
Human-like characteristics	4.18	0.61	1
Emotional connection	4.05	0.68	2
Brand personality	3.96	0.72	3
Trustworthiness	3.91	0.70	4
Social interaction	3.84	0.75	5
Relationship orientation	3.76	0.79	6
Overall perception	3.95	0.64	

Source: AMOS Output

With an overall mean score of 3.95, the results show that respondents had a favourable opinion of brand anthropomorphism. Human-like traits had the highest mean score ($M = 4.18$) among the six aspects, followed by brand personality ($M = 3.96$) and emotional connection ($M = 4.05$). Relationship orientation had the lowest mean ($M = 3.76$), indicating that while consumers view brands as human, they are somewhat less inclined to form enduring relationships with them.

Objective 2: To investigate gender differences in brand anthropomorphism perception

Table 10: Independent samples t-test

Dimension	Male (n=300) Mean $\pm$ SD	Female (n=300) Mean $\pm$ SD	t-value	p-value	Result
Human-like characteristics	4.06 $\pm$ 0.64	4.30 $\pm$ 0.56	-4.81	<0.001	Significant
Emotional connection	3.88 $\pm$ 0.71	4.22 $\pm$ 0.59	-6.14	<0.001	Significant
Brand personality	3.85 $\pm$ 0.70	4.07 $\pm$ 0.66	-3.97	<0.001	Significant
Social interaction	3.72 $\pm$ 0.77	3.96 $\pm$ 0.68	-4.15	<0.001	Significant
Trustworthiness	3.84 $\pm$ 0.71	3.98 $\pm$ 0.68	-2.48	0.013	Significant
Relationship orientation	3.60 $\pm$ 0.82	3.92 $\pm$ 0.71	-5.12	<0.001	Significant
Overall perception	3.83 $\pm$ 0.61	4.08 $\pm$ 0.58	-5.73	<0.001	Significant

Source: SPSS Output

All six aspects of brand anthropomorphism perception showed statistically significant gender differences ($p < 0.05$) according to the independent samples t-test. Women tend to see anthropomorphic brands more favourably and have stronger emotional and relational ties with them, as evidenced by the considerably higher mean scores that female respondents reported compared to male respondents on all categories.

Objective 3: To identify distinct consumer segments based on gender

Table 11: Cluster analysis results

Cluster	Characteristics	Male	Female	Total	Percentage
Cluster 1	Highly anthropomorphism-oriented consumers	82	178	260	43.3
Cluster 2	Moderately anthropomorphism-oriented consumers	144	89	233	38.8
Cluster 3	Low anthropomorphism-oriented consumers	74	33	107	17.9
Total		300	300	600	100

Interpretation

Customers with a high degree of anthropomorphic perception made up the biggest section (43.3%), the majority of whom were female (68.5% of the cluster). Customers with relatively low anthropomorphic perceptions, who were primarily male, made up the third category (17.9%), while the second section (38.8%) represented customers with intermediate anthropomorphic perceptions. According to these results, customer segmentation based on anthropomorphic brand impressions is significantly influenced by gender.

Objective 4: To examine the influence of brand anthropomorphism on consumer behavior**Table 12: Multiple regression analysis**

Dependent Variable: Consumer Behavior

Predictor	Beta (β)	t-value	p-value
Human-like characteristics	0.284	7.61	<0.001
Emotional connection	0.331	8.84	<0.001
Brand personality	0.213	5.42	<0.001
Social interaction	0.178	4.39	<0.001
Trustworthiness	0.194	5.03	<0.001
Relationship orientation	0.257	6.58	<0.001

Source: SPSS Output

Table 13: Model Summary

R	R ²	Adjusted R ²	F	Sig.
0.812	0.659	0.655	191.38	<0.001

Source: SPSS Output

The regression model accounted for 65.9% of the variation in consumer behaviour and was statistically significant ($F = 191.38$, $p < 0.001$). The best predictor was found to be emotional connection ($\beta = 0.331$), followed by human-like traits ($\beta = 0.284$) and relationship orientation ($\beta = 0.257$). These results suggest that when consumers view

companies as emotionally engaging and human-like, they are more likely to display good behavioural outcomes, such as positive attitudes, purchase intention, and brand loyalty.

Summary of Hypothesis Testing

Table 5.5 Hypothesis testing results

Hypothesis	Statement	Result
H1	Consumers exhibit a positive perception of brand anthropomorphism.	Supported
H2	Significant gender differences exist in brand anthropomorphism perception.	Supported
H3	Distinct consumer segments can be identified based on gender.	Supported
H4	Brand anthropomorphism positively influences consumer behavior.	Supported

Source: Compiled from SPSS Output

3. Discussion

The current study looked at how consumers perceived brand anthropomorphism, looked at gender disparities, established gender-based customer segments, and evaluated how brand anthropomorphism affected consumer behaviour. The results show the significance of anthropomorphic branding in influencing customer attitudes and behaviours and offer insightful information on how consumers react to businesses that display human-like traits.

The six variables of brand anthropomorphism perception—human-like traits, emotional connection, brand personality, social interaction, trustworthiness, and relationship orientation—that together accounted for 71.244% of the total variance were found by exploratory factor analysis. With factor loadings above 0.70 and Cronbach's alpha values ranging from 0.889 to 0.932, all factors showed good reliability, demonstrating the measuring scale's durability.

Convergent validity was established by standardised factor loadings, composite reliability, and average variance extracted meeting the suggested criteria; discriminant validity was proven by the Fornell–Larcker criterion and HTMT ratio. Furthermore, the model fit indices showed that the suggested measurement model and the observed data fit each other well. Overall, the results show that the six-factor model is valid and dependable for evaluating brand anthropomorphism perception and may be utilised with confidence for further studies such as structural equation modelling, customer segmentation, and gender comparisons.

According to the descriptive research, consumers' perceptions of brand anthropomorphism were generally favourable, with human-like traits appearing as the most impactful feature, followed by brand personality and emotional connection. These results imply that customers are more inclined to interact with companies that exhibit human characteristics, feelings, and personalities. The idea that anthropomorphic branding increases customer involvement is supported by these impressions, which strengthen the psychological bonds between consumers and businesses.

These results are in line with the research of Fournier (1998), who suggested that customers frequently form relationships with brands akin to human relationships, and Aaker (1997), who highlighted the significance of brand personality in differentiating brands. The findings also corroborate the anthropomorphism argument put out by Epley et al. (2007), which contends that people inherently give non-human creatures human traits.

Compared to male respondents, female respondents expressed far greater opinions of human-like traits, emotional connection, social engagement, reliability, and relationship orientation. These results suggest that anthropomorphic brands tend to elicit higher emotional and relational relationships from female customers. The findings are in line with Social Role Theory (Eagly, 1987) and Gender Schema Theory (Bem, 1981), which contend that women typically behave more relationship-oriented and emotionally sensitive than males. Meyers-Levy and Loken (2015) revealed similar findings, finding that female consumers frequently perceive marketing material in a more holistic and emotionally motivated way.

Three different customer categories with differing degrees of anthropomorphic brand perception were found using cluster analysis. Customers with relatively low anthropomorphic perceptions made up the smallest sector, with a greater percentage of male respondents, while the largest segment was primarily made up of female customers with strong anthropomorphic perceptions. These results demonstrate the value of gender as a significant foundation for market segmentation and recommend that anthropomorphic branding tactics be customised for various customer groups rather than using a standard marketing strategy.

Brand anthropomorphism has a considerable impact on customer behaviour, according to the regression study. The greatest predictor among the six qualities was emotional connection, which was followed by relationship orientation and human-like traits. This suggests that customers are more inclined to trust, favour, and stick with businesses that foster interpersonal connections and emotional attachment. These results support earlier research by Aggarwal and McGill (2007), MacInnis and Folkes (2017), and Puzakova and Aggarwal (2018), which found that anthropomorphic branding increases customer trust, purchase intention, emotional connection, and brand loyalty.

All things considered, the results support the increasing significance of anthropomorphic branding in modern marketing. Understanding gender-specific customer responses is crucial for creating successful marketing strategies as companies use conversational AI, virtual influencers, chatbots, and humanised digital interfaces more often. By combining consumer segmentation, gender disparities, and brand anthropomorphism into a unified empirical framework, the study adds to the body of literature.

4. Conclusion

Based on consumers' reactions to anthropomorphic branding signals, the current study defined several consumer categories and examined gender-based variations in brand anthropomorphism perception. The results show that consumers usually view anthropomorphic brands favourably, especially when it comes to human-like traits and emotional resonance. These factors are essential for improving positive customer behaviour and fortifying consumer-brand ties.

The study also shows that consumers' impressions of anthropomorphic brands varies significantly between male and female customers. Compared to their male counterparts, female customers show more emotional connection, trust, and relationship orientation towards anthropomorphic brands. Furthermore, the discovery of three separate consumer categories demonstrates that, in anthropomorphic branding scenarios, gender is a useful foundation for market segmentation.

Additionally, the findings show that brand anthropomorphism has a substantial impact on customer behaviour, with the biggest predictor of positive behavioural outcomes being emotional connection. These results demonstrate the strategic importance of adding human-like traits to branding campaigns in order to increase consumer engagement, brand preference, and sustained loyalty.

By combining Anthropomorphism Theory, Brand Personality Theory, Consumer–Brand Relationship Theory, Gender Schema Theory, and Social Role Theory into a single framework, the study expands the body of research on anthropomorphism from a theoretical standpoint. From a managerial standpoint, the results offer marketers useful advice on how to create gender-sensitive branding strategies, customise consumer experiences, and increase emotional involvement through anthropomorphic brand communication. Overall, the study presents significant implications for

branding strategies in increasingly digital and technologically advanced marketplaces and advances our knowledge of how anthropomorphic branding affects customer views.

Scope for Future Research

There are still a number of chances for further research, even if the current study offers significant insights into gender-based variations in brand anthropomorphism perception.

To improve the generalizability of the results across various cultural and regional settings, future research may use bigger and more geographically varied samples. The impact of cultural values on anthropomorphic brand impressions may be further shown by comparative research involving customers from other nations.

To ascertain how these attributes influence customers' reactions to anthropomorphic branding, researchers may also look at other demographic factors including age, education, income, employment, and personality traits. Further insights into changing customer preferences may be obtained by examining generational variances, especially among Generation Z, Millennials, and older consumers. By adding other outcome variables including brand trust, brand love, customer engagement, customer happiness, electronic word-of-mouth, brand advocacy, and repurchase intention, future research might expand the current framework. A more thorough knowledge of consumer behaviour would result from investigating the mediating and moderating interactions between these factors.

Future research should look on anthropomorphic interactions with AI-powered chatbots, virtual influencers, service robots, voice assistants, and metaverse-based brand experiences because artificial intelligence is developing so quickly. Understanding consumer reactions to new types of human–technology interaction might be improved by such study.

Additionally, longitudinal study methods may be used to investigate how anthropomorphic brand views evolve over time and determine whether long-term consumer-brand connections are strengthened by consistent exposure to humanised branding. Furthermore, qualitative methods like focus groups, in-depth interviews, and ethnographic research may offer deeper understanding of the psychological processes underpinning anthropomorphic brand impressions.

In order to ascertain whether the efficacy of anthropomorphic branding varies across industries, future research may compare anthropomorphic branding across various product and service categories, such as luxury brands, retail brands, healthcare services, banking, hospitality, education, and e-commerce platforms. Such studies would contribute to the body of knowledge on consumer behaviour and offer practitioners useful information for creating more successful, customer-focused branding strategies.

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