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He Buys with Heart, She Buys with Thought? A Multi-Group Analysis of Gender Differences in Anthropomorphic Character Effects

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Abstract: *In a world that is over-designed, anthropomorphic products have moved beyond fad to become symbolic tools that shape the way things are perceived, felt, and acted upon deliberately. The present paper examines the influence of anthropomorphism appeal by three dimensions (appearance anthropomorphism, emotional anthropomorphism, and image anthropomorphism) on consumer purchase decision-making, and product knowledge as a cognitive mediator. Based on the Stimulus-Organism-Response (S-O-R) model, the study used a quantitative research design that surveyed 364 Indonesian consumers of collectibles using purposive sampling. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to conduct data analyses. The results suggest that visual and thematic attributes of anthropomorphic products positively affect product knowledge which further has a strong positive influence on purchase intention. Emotional anthropomorphism has a direct effect on intention by way of affective involvement as opposed to cognitive elaboration. Multigroup analyses according to gender show that men are more affected by emotional anthropomorphism in the case of visual and thematic clarity, which is contrary to the traditional ideas of female emotional superiority. Taken together, these findings point to two symbolic pathways through which anthropomorphic design works, namely, cognitive and affective. The paper also provides theoretical contributions to the field of symbolic processing in consumer behavior and practical implications to marketers who wish to develop products that not only appeal, but also connect and convert to the consumers.*

Keywords: *Appearance Anthropomorphism, Emotional Anthropomorphism, Image Anthropomorphism, Product Knowledge, Purchase Intention, Gender Differences.*

INTRODUCTION

The anthropomorphism of modern marketing is a paradigmatic shift in the expression of symbolic meaning and emotive value in design communication. In a more hypervisual and affectively saturated market, consumers are becoming more involved in brands that have human characteristics, emotions, and expressions (Lee & Oh, 2021; Mzoughi et al., 2017). Such phenomenon is especially relevant in the collectible product industry where the sincere consumption is informed not only by the functional utility but also by identity formation, personalization, and emotional attachment (Lanier et al., 2013; Wang & Peng, 2023). Collectible

figurines, like the Labubu made by Pop Mart in Indonesia, have quickly gained popularity among the Millennials and the Generation Z, transforming what used to be toys into cultural artifacts. Such anthropomorphic patterns serve as more than decorative ornaments because they can trigger the social and emotional schemata of consumers (Bondt et al., 2018). However, although anthropomorphic cues have become widespread, a critical study of how these design features influence the cognitive processes, particularly in the emerging markets where emotional design is a key market differentiator, is still required.

Pop Mart offers a rather illustrative point of focus in such a study. Unlike traditional toy brands, Pop Mart uses the packaging techniques that are visually appealing, emotionally attractive, and narratively consistent with childlike curiosity and adult nostalgia (Mzoughi et al., 2017; Phan & Hoai, 2025). It may not only be due to scarcity marketing strategies or fan culture but also to its ability to create human-like characters in its characters (Ou, 2024; Pan et al., 2024). Pop Mart is a perfect example of a design-oriented model of symbolic consumption with an annual global sales volume of over 6.3 billion yuan in 2023 and the presence in over 30 countries (Pop Mart, 2024). Contrary to most Western brands, which focus on functionality or humour, Pop Mart focuses on emotional appeal, aesthetics, and cultural relevance, thus, allowing a causal analysis of how consumers interpret anthropomorphic stimuli to form product knowledge and buying decisions.

In the modern literature, the theory of symbolic consumption is a necessary analytic model of understanding how anthropomorphic design works beyond the visual level. Consumers engage in the routine practice of interacting with commodities not only due to their utilitarian uses but also due to the symbolic values that they carry within them-values that people utilize to express or fulfill parts of their identities (Elliott & Wattanasuwan, 1998). Therefore, figurines like the Labubu of Pop Mart are more than toys; they are means of expression, personality and identity. The anthropomorphic objects take on the position of the symbolic agents, allowing projections of desire, attachment and meaning construction, particularly in youth-centric environments where lifestyle brands are blurring the distinction between character and consumer identity (Ou, 2024; Phan & Hoai, 2025). A sophisticated understanding of these symbolic processes is important to understanding how consumers read the appearance, emotional appeal and visual imagery of anthropomorphic design.

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This paper reviewed the impact of three aspects of anthropomorphism, i.e., appearance, emotional expression, and image realism on consumer product knowledge and purchase intention. Based on the Stimulus-Organism-Response (SOR) model (Mehrabian & Russell, 1974), this paper will use anthropomorphism as the stimulus (S), which will in turn arouse cognitive behavior such as product knowledge (organism or O), which will eventually lead to behavioral outcome (R), purchase intention. The existing literature shows that anthropomorphic features create positive attitude and emotional connection (Lee & Oh, 2021; Puzakova & Kwak, 2023), but little is known about their impact on cognitive processes, including product comprehension (Baek & Kim, 2023). In the field of media and cultural studies, it has been found that the three aspects of anthropomorphism, which are appearance, expression of emotions, and feeling of liveliness, play different but interconnected roles. The first dimension is that the external features of a stimulus (e.g., facial design or general body form) improve recall and perceptions of realism (Bondt et al., 2018). The second dimension deals with the existence of affective cues, including sadness, empathy, or care, which promote empathy and promote relational processing (Gjersoe et al., 2015; Wang & Peng, 2023). Lastly, the third dimension measures the perception of liveliness or expressiveness, which is a factor that strengthens the formation of identity and symbolic ownership (Pan et al., 2024). Collectively, these results describe the complexity of anthropomorphism and its presentation with regard to audience interaction and representation. The current study combined these dimensions in order to shed light on the process of symbolic design internalization as knowledge and eventual consumer intention.

A number of gaps remain in literature on anthropomorphism. The majority of the past research focuses on affective or relationship outcomes, including brand attachment (MacInnis & Folkes, 2017), and cognitive pathways, including product knowledge, are underrepresented (Trzebiński et al., 2023). Moreover, anthropomorphism in the field has been perceived as one-dimensional, and there is an underestimation of the heterogeneity of the visual, emotional, and symbolic design components (Festerling & Siraj, 2022; Velasco et al., 2021). Also, the moderator gender has not been taken into consideration yet it has been proved that men and women do not process anthropomorphic cues in the same manner. Women are generally more sensitive to individual anthropomorphized characters and respond well to dyadic interactions that are emotionally dense and men are more sensitive to group or abstract anthropomorphism (Puzakova

& Kwak, 2023; Zhou et al., 2019). Such a difference suggests that the same design characteristics can produce differences in psychological processing between genders and the importance of Multiple Group Analysis (MGA) to examine these differences.

To fill these gaps, the researcher designed an integrated cognitive-behavioral model to investigate the direct and indirect effects of anthropomorphism of appearance, emotional, and image to purchase intention with the mediation of product knowledge. In addition, it tested gender as a moderator with MGA to determine the difference between men and women in processing symbolic design cues. This research is novel in three main contributions: (1) it extends the S-O-R model by introducing cognitive mediation processes; (2) it introduces the multidimensional anthropomorphism in a single conceptual framework; (3) it confirms gender differences in the comprehension of symbolic processing of anthropomorphic stimuli based on MGA; and (4) it offers practical implications to collectible marketing in Southeast Asia. The results of this research are likely to provide practical knowledge to marketers that seek to individualize anthropomorphic design according to gender-specific symbolic perception and contribute to the theoretical literature on cognition-based anthropomorphism in consumer behaviour.

2. Literature Review

2.1. Stimulus–Organism–Response (SOR) Theory

The Stimulus-Organism-Response (S-O-R) model, as formulated by Mehrabian & Russell (1974) provides a strong theoretical perspective through which the relationship between external stimuli and internal processing to trigger behavioral response can be studied. In consumer research, the stimulus refers to the environmental or design-related stimuli (e.g. the shape of the object), and organism to the cognitive or affective responses that take place within the individual (e.g. knowledge of the product). A response will then be in the form of intention or action (e.g., the purchase decision). The stimulus is anthropomorphism which involves projecting human characteristics into non-human objects, which in turn leads to symbolic interpretation and meaning construction. In this regard, product knowledge can be considered the most important organismic reaction, since the consumers incorporate anthropomorphic messages to build knowledge concerning the product. The subsequent response is then based on this knowledge, which

influences the trajectories of purchase intentions (Duong, 2023; Islam & Rahman, 2017; Jabeen et al., 2022; Trzebiński et al., 2023).

Although the S-O-R model has been widely used in digital and environmental psychology, little has been done in investigating the model with regard to the effect of symbolic product design, especially the presence of anthropomorphized characters, on emotional and cognitive organismic responses. These symbols are semiotic stimuli and they trigger affective and cognitional processes. More importantly, these interpretations vary depending on gender; men and women interpret and react to visual stimuli in different ways depending on emotional expressiveness, perceptual style and pre-existing social schemas. Placing the concept of anthropomorphism in the context of S-O-R model, the current study not only examines the direct effect that the design cues have on the formation of intentions but also explores the inner dynamics of symbolic processing that are mediated by demographic characteristics like gender.

2.2 Appearance Anthropomorphism

Appearance anthropomorphism involves attributing corporeal features of human beings, namely, body structure, motoric expression, and facial architecture, to consumer products, thus encouraging visual recognition and experiential familiarity due to the visual resemblance to human beings (Pan et al., 2024; Wei et al., 2025; Zhang & Wang, 2023). These physical signals act as aesthetic heuristic that draws the attention of the consumers and enables symbolic processing, especially in collectible and character-based commodities (Bondt et al., 2018). In cases where the product form resembles human figuration, perceived realism and social presence are enhanced, so it is possible to engage in more intensive cognitive elaboration and identity attachment (Landwehr et al., 2011; Wang et al., 2025). Within the realm of Pop Mart, the figurines with symmetrical facial structure and anthropomorphic morphology are deliberately used to generate a more profound involvement of the consumers on the basis of recognition processes.

2.3 Emotional Anthropomorphism

Emotional anthropomorphism describes how human emotions such as sadness, joy, or empathy are projected onto products, enabling consumers to perceive them as emotionally

expressive agents rather than inert objects. This affective dimension extends beyond visual resemblance by activating empathy and parasocial attachment that shape cognitive and behavioral responses (Chen et al., 2018; Kim & Im, 2023). Empirical studies show that emotional cues—particularly sad expressions—can evoke compassion and influence evaluation or purchase intention (Escobar et al., 2025; Gerecht et al., 2025). In digital contexts, anthropomorphic designs heighten emotional warmth and trust, mediating the link between perception and intention (Bai et al., 2025; Wang et al., 2025). Even subtle affective signals can increase psychological vitality and social connectedness by satisfying consumers' need for emotional reciprocity (Chen et al., 2018). Overall, emotional anthropomorphism functions as an affective mechanism in the Stimulus–Organism–Response model, where emotion-embedded stimuli trigger internal empathy and lead to behavioral outcomes (Kim et al., 2024).

2.4 Image Anthropomorphism

Image anthropomorphism refers to the visual expression of lifelike expression and animation that creates a sense of the illusion of life and thus of being alive, creating an increased symbolic resonance of a product. In contrast to conventional appearance, which only implies visual representation, image-based cues create movement, posture, and gaze, which together increase the perceived personality and agency of the object (Pan et al., 2024). This anthropomorphic representation reinforces visual appeal and promotes the identity-based processing, because consumers attribute the product with the social role or story (Chen et al., 2021). Expressive faces and elaborate designs in collectible contexts, such as Pop Mart, serve to act as a projective surface where consumers project meaning and strengthen recognition and symbolic ownership (Liu & Li, 2024).

2.5 Product Knowledge

In the sphere of symbolic consumption, the most prominent of which is collectible figurines, product knowledge exists on two parallel planes, it is both functional and interpretative. Consumers build internalized mental maps that go beyond the mere utilitarian aspects of a commodity, to include the cues that the object presents regarding the self and the social

environment. The operational definition of product knowledge can be described as the degree to which consumers perceive and internalize product characteristics, functional abilities and symbolic meaning (Brucks, 1985). It takes a decisive role within the S-O-R model because it is the organismic response that connects design-based stimuli to informed judgment (Kim & Han, 2014; Martinelli et al., 2016). As empirical evidence shows, anthropomorphic design elements complement such knowledge by making products more accessible and recognizable using known human constructs (Hart & Royne, 2017). Recent studies also show that anthropomorphic design, in the case where it is seen as both consistent and deliberate, improves cognitive processing and brand understanding (Baek & Kim, 2023; Trzebiński et al., 2023). Therefore, product knowledge is an important mental mediator between anthropomorphic design and consumer intention.

2.6 Purchase Intention

Purchase intention can be understood as the likelihood that a consumer will engage in a purchasing behavior, which is influenced by cognitive evaluations, and by emotional resonance (MacInnis & Folkes, 2017; Song & Luximon, 2020). In an anthropomorphized system, in which products are given human characteristics, trust, liking, and a symbolic form of identification are enhanced, which strengthen the possibility of a purchase action (Fournier, 1998; Pan et al., 2024). The combination of emotional stimuli and visual anthropomorphic stimuli, and the situational contexts in general, enhances affective and cognitive investment in the product, especially in non-utilitarian or expressive products like collectables (Phan & Hoai, 2025). New data also indicate that the same intent is shaped not only by the process of design-perception but also by personal factors, such as gender, self-construal, and emotional sensitivity (Chan & Gohary, 2023; Puzakova & Kwak, 2023).

2.7 Appearance Anthropomorphism and Product Knowledge

In the field of product design, the phenomenon of appearance anthropomorphism is defined as the intentional incorporation of human-like physical features (e.g. symmetrical facial features, corporeal proportions, gestural cues) into the visual composition of an object. These qualities trigger recognition-based schematic activation in the consumers thus enhancing cognitive

involvement and facilitating a more effective interpretation (Bondt et al., 2018; Pan et al., 2024). Under S-O-R model, the appearance of the object acts as an external stimulus, which triggers the internal thinking (Mehrabian & Russell, 1974). Past researchers have found that anthropomorphic package designs methodically intensify feelings of recognizability and understanding (Landwehr et al., 2011; B. Wang et al., 2025). Visual similarity to human shapes stimulates the symbolic personification of collectibles and increases the retention of knowledge ((Li & Huang, 2024; Trzebiński et al., 2023).

H1: Appearance anthropomorphism has a positive effect on product knowledge

2.8 Emotional Anthropomorphism and Product Knowledge

Emotional anthropomorphism refers to the act of attributing emotional displays, e.g., sadness, joy, or care, to non-human products and thus allowing consumers to regard them as emotionally sensitive agents (MacInnis & Folkes, 2017). Emotional cues can assist symbolic meaning-making, as well as access relational cognition, although they are mainly affective (Gjersoe et al., 2015; Veer, 2013). In the collectible market, characters that are depicted as emotional can cause empathic processing, which leads to more product knowledge (Cooremans & Geuens, 2019; Koo et al., 2019; Wang & Peng, 2023; Yu et al., 2024). However, the effect on the acquisition of knowledge seems to depend on the personal emotional sensitivity and the contextual relevance (Kim & McGill, 2011; Tahiroglu & Taylor, 2019).

H2: Emotional anthropomorphism has a positive effect on product knowledge.

2.9 Image Anthropomorphism and Product Knowledge

Anthropomorphism of images is a multidimensional concept, which includes visual expressiveness in general and the perceived animation of objects, which together allow people to interpret objects as living. It is expressed in the form of a set of visual cues, including posture, facial expression, eye direction, and realism of expression, which collectively create subconscious social assumptions and increase perceived control and thinking attention (Liu & Li, 2024; Pan et al., 2024). Therefore, items with expressive imagery are differently encoded into memory and are

exposed to higher rates of mental simulation, which is particularly evident in the child-oriented and collector-oriented design contexts (Gelman et al., 2022; Puzakova & Kwak, 2023).

H3: Image anthropomorphism has a positive effect on product knowledge.

2.10 Product Knowledge and Purchase Intention

Product knowledge is the level of familiarity and understanding of the product features, usage patterns and symbolic associations by a consumer (Brucks, 1985; Tzeng & Ho, 2022). In the S-O-R theory, knowledge plays the role of the organismic mediator between the stimulus and the following behavioral response (Jacoby, 2002). Numerous empirical studies show that once consumers internalize either emotional, visual, or symbolic anthropomorphic elements of the design, they have more acute judgments and intentions to buy the product (Hart & Royne, 2017; Martinelli et al., 2016). The greater the knowledge, the less the uncertainty, the more confident a decision can be made, and the easier it is to express the perceived value (Foster et al., 2022; Trzebiński et al., 2023).

H4: Product knowledge has a positive effect on purchase intention.

2.11 Appearance Anthropomorphism and Purchase Intention

The empirical evidence demonstrates that human-like appearance creates a sense of trust, attractiveness, and desire to approach (Epley et al., 2007; MacInnis & Folkes, 2017). In the design setting, anthropomorphic packaging and figurines elicit a more powerful consumer identification and increased brand love (De Bondt et al., 2018). In specific, the symbolic ownership phenomenon is strong in the case of Pop Mart as it uses characters in the form of bodies that create intuitive and affective resonance (Ou, 2024; Pan et al., 2024). However, the extent of these effects is determined by the meaningfulness of the relationship between the form and product functionality (Blut et al., 2021).

H5: Appearance anthropomorphism has a positive effect on purchase intention.

2.12 Emotional Anthropomorphism and Product Knowledge

Empirical results are always consistent in showing that emotionally expressive products create parasocial proximity, thus increasing tendencies to help or buy (Baek et al., 2022; Puzakova et al., 2013). Affect-expressive characters traits, which are frequently evaluated as trustworthy and likable, are used in the interpersonal models, supporting emotional attachment and prosocial effects like charity (Kim et al., 2024; Yu et al., 2024). In symbolic consumption settings, emotional anthropomorphism triggers the narrative engagement and storytelling, which are highly predictive of loyalty and behavioral intention (Chan & Gohary, 2023). These mechanisms have a high efficacy especially in collectible product categories that are emotionally intense.

H6: Emotional anthropomorphism has a positive effect on purchase intention.

2.13 Image Anthropomorphism and Purchase Intention

The anthropomorphism of images, by enhancing the impression of life and agency of products, extends to the extent that the anthropomorphism is able to depict human-like characteristics vividly. These visual signals result in symbolic meaning and psychological ownership, and the result is increased consumer attachment (Aggarwal & McGill, 2007; Pan et al., 2024). The studies have shown that realistic visual attributes such as facial expression, animation, and posture trigger more perceived animacy and have direct effects on consumer intentions, especially in the experience-driven and collectible categories (Chen & Deng, 2016; Ferrari et al., 2016; Liu & Li, 2024). Empirical studies also reveal that realistic characters contribute to narrative consistency and interactive experience, which further increases the desire of consumers to buy (Kim et al., 2024; Trzebiński et al., 2023).

H7: Image anthropomorphism has a positive effect on purchase intention.

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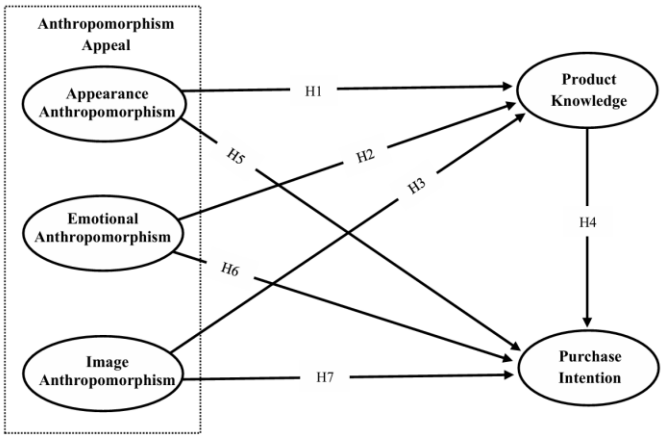

Figure 1. *Conceptual Framework*

METHOD

3.1 Research Design and Sampling

The current research uses a quantitative explanatory research design to examine the role of anthropomorphic product design on consumer product knowledge and purchase intention, where gender is used as a moderating factor. The authors base their ideas on the Stimulus Organism Response (S-O-R) model (Mehrabian & Russell, 1974) to conceptualize anthropomorphic cues as external stimuli, which causes internal cognitive responses, and eventually results in behavioral outcomes. A cross-sectional survey method was used to capture the current reactions of the consumers.

The sample was the Indonesian consumers who had known or had contact with the Pop Mart collectible products, namely the Labubu series. The purposive sampling method was used to make sure that the respondents had an appropriate exposure to the object of the research. The data was collected in February-July 2025 with 364 valid answers. The sample size is sufficient to perform the PLS-SEM analysis, as it is at least ten times higher than the largest number of formative indicators, which point to a construct (Hair et al., 2021), and can be used to test hypotheses, including multi-group comparisons. The current research design attempted to achieve ecological validity by making sure that the respondents were subjected to anthropomorphic stimuli. This plan strengthened the validity of the results. The sample gender mix was not evenly distributed but the

demographic population of Pop Mart buyers was well represented and is quite female-dominant in the Asian markets.

3.2 Data Collection and Research Instrument

The current investigation used primary data gathered by means of an online, self-administered questionnaire distributed through social media, collector groups, and instant-messaging services. The questionnaire was divided into two major parts, namely respondent demographics and construct measurements. Each of the measurement items was based on a five-point Likert scale, ranging between 1 (strongly disagree) and 5 (strongly agree). The scales were based on existing and already validated research and adjusted to the anthropomorphic product design of Pop Mart. Before its use, a pilot test of 30 respondents was then conducted to determine the level of understanding, and small adjustments were done. In order to ensure language consistency and logical consistency, two experts in the field of marketing were used to evaluate the face validity of the translated questionnaire. The content validity was achieved through adaptation of existing and validated instruments. Table 1 summarizes the measurement items used for each construct in the study.

Variables	**Item**
Appearance Anthropomorphism (Chen et al., 2024; Golossenko et al., 2020)	The design of the Pop Mart character resembles a human
	The physical features of the Pop Mart character are similar to those of real humans
	The Pop Mart character looks as if it were inspired by human form
Emotional Anthropomorphism (Chen et al., 2024; Golossenko et al., 2020)	The character seems to show care or empathy through its expression or posture
	The character's design reflects emotions similar to what humans feel in social situations
	The character appears emotionally sensitive to how people might perceive it
Image Anthropomorphism (Pan et al., 2024)	The Pop Mart character has a lifelike appearance
	The design of the character makes it seem alive
	The character looks naturally expressive, similar to how real humans appear
Product Knowledge (Tzeng & Ho, 2022)	I can clearly remember important information about Pop Mart products
	I can easily recognize Pop Mart products among other similar items
	I have a good understanding of the strengths or uniqueness of Pop Mart products

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Variables	Item
Purchase Intention (Pan et al., 2024)	I would consider purchasing Pop Mart products because I find the characters appealing
	If I get the chance, I intend to buy Pop Mart products featuring these characters
	I am likely to purchase Pop Mart products because of the influence of their character design
	I plan to buy Pop Mart products that are represented by these anthropomorphic characters

Table 1. *Measurement Items and Sources*

3.3 Data Analysis

The current research study used Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4.0 to assess the validity of the measurements and test the hypotheses. The PLS-SEM was considered a suitable method because of its ability to house complicated models that are characterised by more than one latent construct and its toleration of non-normal data. The first examination was the measurement model, which included the reliability of constructs, convergent and discriminant validity tests with FornellLarcker criterion.

Then the focus was on the structural model. To assess the magnitude of relationships between the variables, path coefficients, coefficient of determination (R^2) and effect size (f^2) were analysed, and hypothesis testing was done using bootstrapping with 5,000 resamples, which were conducted at a one-tailed significance level corresponding with directional theoretical expectations. In order to further clarify the issue of gender moderation of the product knowledge impact on purchase intention, Multi-Group Analysis (MGA) was conducted, which makes it possible to compare structural path coefficients between male and female respondents and, thus, gain a deeper understanding of gender-specific cognitive reactions to anthropomorphic design. Before conducting multigroup analysis (MGA), Measurement Invariance of Composite Models (MICOM) procedure described by was conducted to establish equivalence of gender groups. The results showed partial measurement invariance, which allowed strong comparisons of path across the target populations.

RESULT AND DISCUSSION

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4.1. Respondent Characteristics

An online survey was carried out using purposive sampling, which was specifically aimed at reaching Indonesian consumers who were familiar with Pop Mart collectible figurines, particularly the Labubu series. A total of 364 valid responses were obtained. Gender-wise, 69.8 percent of the respondents were female and 30.2 percent were male, which is consistent with the demographic profile of Pop Mart buyers in Asian markets, where female collectors dominate. The majority of respondents were aged between 19 and 24 years (67.3%), followed by those aged 25 to 28 years (20.1%), indicating that the sample mainly represents Generation Z and young Millennials who are actively involved in design-oriented consumption and digital fandoms. In terms of education level, most participants had completed senior high school or vocational school (46.7%) or held a bachelor's degree (44.8%), indicating a relatively literate and informed consumer base. Regarding monthly income, the majority earned less than IDR 2,500,000 (57.1%), followed by those earning IDR 2,500,000 to IDR 5,000,000 (23.6%). These demographic features portray a young and symbolically expressive audience with moderate purchasing power—an ideal representation of Pop Mart's target consumers who value aesthetic design and emotional storytelling in collectible products. Table 2 provides the details of demographic information.

	Description	Frequency	Percentage (%)
Gender	Male	110	30.2
	Female	254	69.8
Age	13–18	46	12.6
	19–24	245	67.3
	25–28	73	20.1
Education	Elementary School	3	0.8
	Junior High School	4	1.1
	Senior High School / Vocational	170	46.7
	Diploma	26	7.1
	Bachelor's Degree	163	44.8
	Master's Degree	6	1.6
Monthly Income (in IDR)	< 2,500,000	208	57.1
	2,500,000 – 5,000,000	86	23.6

5,000,001 – 7,500,000	32	8.8
7,500,001 – 10,000,000	19	5.2
> 10,000,000	19	5.2

Table 2. *Respondents Characteristic*

4.2. Measurement Model Assessment

Measuring the structural model was preceded by measuring the measurement model with PLS-SEM on SmartPLS 4.0 in line with Hair et al. (2021). Internal consistency was satisfactory in all five constructs of reflection: Cronbach alpha was 0.841 to 0.912 and Composite Reliability (CR) was 0.892 to 0.938. The convergent validity was supported, and the AVE values were between 0.641 and 0.792.

In the process of indicator refinement, three items (EA1, EA2 and IA4) were eliminated due to low outer loadings that were below the acceptable level. Their elimination enhanced quality of the measurement model without reducing the conceptual coverage. All the rest had outer loadings that were greater than 0.70, which justifies the reliability and validity of the constructs retained. Table 3 shows the entire results. The evaluation of convergent validity is not enough to check whether latent constructs are empirically different hence discriminant validity was also tested.

Variables Measurement	Outer Loadings	Cronbach's alpha	CR	AVE
Appearance Anthropomorphism (AA)		0.723	0.843	0.641
AA1	0.775			
AA2	0.802			
AA3	0.824			
Emotional Anthropomorphism (EA)		0.868	0.919	0.792
EA3	0.871			
EA4	0.901			
EA5	0.897			
Image Anthropomorphism (IA)		0.841	0.904	0.759
IA1	0.848			
IA2	0.881			

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Variables Measurement	Outer Loadings	Cronbach's alpha	CR	AVE
IA3	0.884			
Product Knowledge (PK)		0.881	0.919	0.791
PK1	0.884			
PK2	0.886			
PK3	0.897			
Purchase Intention (PI)		0.912	0.938	0.791
PI1	0.851			
PI2	0.887			
PI3	0.911			
PI4	0.906			

Table 3. *Measurement Items*

The discriminant validity was evaluated through the HeterotraitMonotrait Ratio (HTMT) procedure, and all of the obtained values were below the 0.85 threshold suggested by Hair et al. (2021). The largest HTMT value was recorded between Appearance and Image Anthropomorphism (0.774) and then Emotional and Image Anthropomorphism (0.733). These results show that each construct is empirically different and meets the criterion of discriminant validity.

	1	2	3	4	5
Appearance Anthropomorphism					
Emotional Anthropomorphism	0.559				
Image Anthropomorphism	0.774	0.733			
Purchase Intention	0.593	0.664	0.679		
Product Knowledge	0.574	0.467	0.594	0.718	

Table 4. *HTMT Ratio Analysis*

4.3. Structural Model and Hypothesis Testing

The hypothesized structural model was tested in SmartPLS 4.0 through bootstrapping process of 5000 resamples. The results provided $\mathbf{R^2}$ of 0.567 and 0.306 in Purchase Intention and Product Knowledge respectively, which means that the model explains about 56.7 % and 30.6 % of the variance in these constructs respectively. According to Hair et al. (2021), these results

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indicate moderate predictive relevance, especially since behavioral outcomes, namely purchase intentions, are generally multidimensional and thus hard to predict accurately.

Six out of the seven hypotheses tested were accepted at the 5 percent level of significance, as detailed in Table 5. Emotional and image anthropomorphism had a significant positive impact on product knowledge and purchase intention, and appearance anthropomorphism had a significant effect on product knowledge. The highest was the path of product knowledge to purchase intention ($\beta = 0.411$, $p < 0.001$). On the other hand, the direct impact of appearance anthropomorphism on purchase intention was not significant ($\beta = 0.075$, $p = 0.092$), which means that visual appearance is not enough to trigger a purchase unless it is further enhanced by emotional or cognitive stimuli.

The analysis of effect size ($\mathbf{F^2}$) categories helps to explain the magnitude of the relationships under study. The effect size of the pathway between product knowledge and purchase intention was the highest ($\mathbf{F^2}$ = 0.271), which represents a medium-to-large effect. The effect size of the relationship between emotional anthropomorphism and purchase intention was small-to-moderate ($\mathbf{F^2}$ = 0.113), and the rest of the effects, appearance anthropomorphism to purchase intention ($\mathbf{F^2}$ = 0.008) and emotional anthropomorphism to product knowledge ($\mathbf{F^2}$ = 0.013), were only small. Taken together, these findings show that, in spite of the fact that a number of paths were found to be statistically significant, their relative contribution to the explanation of the behavioral outcomes varied, which highlights the centrality of the product knowledge as a cognitive mechanism in the structural model. Overall, hypothesis H5 was rejected and hypotheses H1, H2, H3, H4, H6 and H7 were accepted.

Hypothesis	Path Coefficient (β)	t-Values	p-Values	Decision
H1: Appearance Anthropomorphism → Product Knowledge	0.217	3.368	0.000*	Accepted
H2: Emotional Anthropomorphism → Product Knowledge	0.125	1.846	0.033*	Accepted
H3: Image Anthropomorphism → Product Knowledge	0.301	4.183	0.000*	Accepted
H4: Product Knowledge → Purchase Intention	0.411	8.079	0.000*	Accepted
H5: Appearance Anthropomorphism → Purchase Intention	0.075	1.331	0.092	Rejected
H6: Emotional Anthropomorphism → Purchase Intention	0.287	5.341	0.000*	Accepted

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Hypothesis	Path Coefficient (β)	t-Values	p-Values	Decision
H7: Image Anthropomorphism → Purchase Intention	0.158	2.785	0.003*	Accepted

Note: *Significant at $p < 0.05$

Table 5. *Hypothesis Testing Results*

4.3. Multi-Group Analysis (MGA)

The measurement invariance check was performed in accordance with the procedure suggested by Henseler et al. (2016) using the MICOM algorithm. The results were partially invariant: each construct met the compositional invariance requirement, which meant that the differences between the structural paths of gender groups could be interpreted. The results are important because Cheah et al. (2023) emphasize the need of measurement equivalence to make valid subgroup inferences within the context of PLS-SEM. The demographic of the currently analyzed population (254 female, 110 male) is close to the demographic of the Pop Mart consumers in Indonesia, where the collectible figurines are bought and played with mostly by female consumers. Though the perfect balance between groups, which is usually suggested when analyzing the multigroup model, would be male:female 1:1, the partial measurement invariance, which is proved by MICOM, ensures the soundness and interpretability of subgroup comparisons (Henseler et al., 2016; Cheah et al., 2023). As a result, the unequal sample sizes do not undermine the reliability of the reported gender-based structural path differences.

Multigroup analysis then showed that there was a significant gender difference in the effect of Emotional Anthropomorphism on Purchase Intention. The path coefficient was also greater among the male consumers ($\beta = 0.480$) than the female consumers ($\beta = 0.215$, $p = 0.015$) showing that the emotionally driven symbolic cues have a stronger influence on the purchasing behavior of men. In comparison, there were no statistically significant differences between the two groups in structural paths that involved Product Knowledge as a cognitive mechanism.

Path Relationship	β (Male)	β (Female)	Diff (M-F)	p (PLS-MGA)	Invariant
Appearance Anthropomorphism → Product Knowledge	0.399	0.178	-0.221	0.046*	Yes
Emotional Anthropomorphism → Product Knowledge	-0.107	0.184	+0.291	0.062	Yes

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Path Relationship	β (Male)	β (Female)	Diff (M-F)	p (PLS-MGA)	Invariant
Image Anthropomorphism → Product Knowledge	0.436	0.254	-0.182	0.299	Yes
Product Knowledge → Purchase Intention	0.387	0.439	+0.052	0.288	Yes
Appearance Anthropomorphism → Purchase Intention	-0.029	0.084	+0.113	0.144	Yes
Emotional Anthropomorphism → Purchase Intention	0.480	0.215	-0.265	0.015*	Yes
Image Anthropomorphism → Purchase Intention	0.203	0.147	-0.056	0.135	Yes

Table 6. *Multi-Group Analysis Based on Gender*

5. Discussion

The current exploration aimed to assess how the conflicting aspects of anthropomorphic design alter the cognitive and behavioural patterns in collectible consumption. The results clearly favor the applicability of the S-O-R model to the symbolic product configuration and identify the contributions of appearance, emotion, and image-based anthropomorphism to the determination of both product knowledge and purchase intention. Each dimension is elaborated in detail with its implications.

5.1. The Effect of Appearance Anthropomorphism on Product Knowledge

Hypothesis 1 is supported by the results, which show that appearance anthropomorphism plays a significant role in building product knowledge. It is in line with the existing literature which emphasizes the human-like visual features to advance symbolic recognition and cognitive simulation (Bondt et al., 2018; Pan et al., 2024). Heuristics that activate the schema processing in visual form, e.g., symmetrical faces, humanoid proportions, and so on, lead to memory storage (Landwehr et al., 2011; Trzebiński et al., 2023). These visual shortcuts also serve as perceptual shortcuts that trigger higher-order thinking, especially when the forms are culturally familiar (Duong, 2023). Within the scope of the design-driven markets like Pop Mart, these elements act as external stimuli that enable the mental elaboration within the S-O-R framework, where the form itself represents the meaning and identity (Liu & Li, 2024; Ou, 2024).

As the multigroup analysis shows, this cognitive effect is also much more powerful in relation to male consumers. Such a result aligns with the literature, which indicates that men tend

to be more sensitive to concrete, structural design cues, whereas women tend to be more sensitive to emotional or relationship cues (Puzakova & Kwak, 2023; Zhou et al., 2019). According to previous research, male consumers are more analytical and spatial in processing visual information, especially when they are being asked to consider design or form-related information (Jabeen et al., 2022; Phan & Hoai, 2025). Anthropomorphism in appearance is therefore a cognitively efficient point of entry especially to male audiences, which makes appearance-based anthropomorphism a strategic visual device to promote symbolic comprehension and product identity (Wei et al., 2025). Even though the visual route to cognitive processing is an effective pathway, its practicality depends on cultural background and situation. Some visual qualities can be interpreted in the wrong way or produce uneasiness when left without symbolic continuity and coherent order. As a result, visual cues that tax perceptual resources, commonly known as the uncanny valley, will tend to highlight transparency and generate a negative affect, especially when the elements of design are underspecified or lack any recognizable meaning (Festerling & Siraj, 2022).

5.2. The Effect of Emotional Anthropomorphism on Product Knowledge

Such results support Hypothesis 2 and prove that emotional anthropomorphism is a significant contributor to product knowledge. Symbolic elaboration and relational interpretation are aroused by emotion-laden attributes, e.g. sadness, empathy, and warmth, which help to recognize humanlike properties in products (MacInnis & Folkes, 2017). These signals also facilitate narrative immersion and parasocial bonding, the processes that enhance knowledge through imaginative engagement (Koo et al., 2019; Yu et al., 2024). Emotional cues that are contextually situated and visually noticeable allow consumers to attribute personality and agency to a product, which further strengthens mental simulation and memory (Chan & Gohary, 2023; Chen et al., 2021). Even though the cognitive mechanism behind this effect is not significantly different between genders, emotional triggers in design are relevant to facilitate knowledge-building processes and to supplement the affective pathways that will be discussed in the further analysis.

5.3. The Effect of Image Anthropomorphism on Product Knowledge

The current results support Hypothesis 3, which proved that product image anthropomorphism promotes product knowledge in consumers. This coincidence lies in the ascribed intentionality and apparent agency: demonstrative signs like posture, eye-direction, and expressive gestures allow the viewers to infer the volitional behavior of the object depicted, thus raising the symbolic connotation and cognitive simulation (Gelman et al., 2022; Liu & Li, 2024; Pan et al., 2024). Relevantly, expressive imagery provides animated, story-like features that maintain attention, enhance learning, and make products easier to remember (T.Chen et al., 2021; Koo et al., 2019). Experimental studies repeatedly demonstrate that bright anthropomorphic imagery positively affects brand understanding and reinforces the retention of knowledge among diverse consumer groups (Aggarwal & McGill, 2007; Baek & Kim, 2023). In the context of collectible worlds, especially the Pop Mart products, an anthropomorphic design based on images serves as a cognitively active process of communicating symbolic value in an effective way.

5.4. The Effect of Product Knowledge on Purchase Intention

The empirical results support Hypothesis 4 and thus establishes that product knowledge serves as a major cognitive antecedent of purchase intention. In the S-O-R framework, knowledge is the most important organismic state that mediates between perception and the overt behavioural response (Jacoby, 2002; Mehrabian & Russell, 1974). The more customers demonstrate an understanding of how a product works, what it symbolizes, or what makes it distinct, the more conscious and assured their choice is (Brucks, 1985; Trzebiński et al., 2023). In Pop Mart, familiarity created by design stories, the meaning of a collection, or symbolic valence can help convert the initial interest into a buying intention, especially in cases when people consider collectibles as a part of their identity (Foster et al., 2022; Martinelli et al., 2016).

5.5. The Effect of Appearance Anthropomorphism on Purchase Intention

The results indicate that the Hypothesis 5 is not supported, which indicates that the appearance anthropomorphism does not have a measurable effect on the purchase intention. Despite the fact that visual stimuli like symmetry, human-like proportions, and surface similarity can help to recognize a product and achieve initial cognitive fluency (Bondt et al., 2018; Pan et al., 2024; Trzebiński et al., 2023), they seem to be not enough to induce behavioral reaction without

affective or symbolic depth (Velasco et al., 2021). The anthropomorphic cues based on appearance are mostly used as heuristics of perception, arousing familiarity and recognition, but not as a persuasive cue in the absence of symbolic or emotional context (Wei et al., 2025; Zhang & Wang, 2023), especially when they do not involve emotional expressiveness or narrative coherence (Puzakova et al., 2013). Such visual similarity will be more often treated as decorative rather than motivating in design-led consumption and thus restrictive of its ability to generate intention unless supported by relational meaning or storytelling aspects (Koo et al., 2019). The fact that familiarity exists does not imply that there is persuasive efficacy. The gap between recognition and intention is evident, which reinforces the idea that consumers require multifaceted interpretations that are either emotionally engaging or contextually situated before they can make a purchase hence aligning themselves to the symbolic interactionist view of consumption (Fournier, 1998).

5.6. The Effect of Emotional Anthropomorphism on Purchase Intention

Hypothesis 6 is also supported by empirical data, which shows that emotional anthropomorphism has a significant positive effect on purchase intention. Depictions of sadness, care, or empathy can also be visually presented to foster parasocial intimacy, symbolic warmth, and emotional identification, which, in turn, enhance consumer purchase intentions (Kim et al., 2024; Wang & Peng, 2023). In the realm of collectible products, emotive expressive characters enhance story immersion and individual connection, so that consumers can view the product as more significant and socially relevant. These affective processes supplement the rational assessment process by offering intuitive access points to the decision process, especially in hedonic or identity-based consumption.

The multi-group analysis reveals that this emotional route is much stronger in male customers. This finding contradicts the traditional belief about women being more sensitive to emotions and, instead, indicates that men can be more sensitive to anthropomorphic emotion in the case of visually clear and thematically consistent design (Pan et al., 2024; Puzakova & Kwak, 2023). Previous research has demonstrated that men are open to emotional messages when they are presented in the context of action-based or symbolic stories (Aggarwal & McGill, 2007; Zhou et al., 2019). These findings, therefore, support the main idea of this paper in its title, which is that he buys with heart. Empirical evidence shows that emotional design cues can be combined with

visual clarity and symbolic integrity to show significant effectiveness in appealing to male consumers particularly in a market where emotional expression is culturally less proscribed but visually available (Pan et al., 2024).

5.7. The Effect of Image Anthropomorphism on Purchase Intention

The current study proves that Hypothesis 7 is supported empirically, which indicates that anthropomorphism of an image has a significant effect on purchase intention. In particular, the addition of expressive visual elements gaze direction, posture, and facial intensity increases the perceived animacy, thus enabling consumers to attribute personality and emotional significance to the product (Aggarwal & McGill, 2007; Chen et al., 2021; Pan et al., 2024). Such realistic design promotes symbolic possession and storytelling, especially in collectibles where the perceived character identity is the core of the desirability (Duong, 2023; Liu & Li, 2024). Empirical evidence also shows that realistic anthropomorphic pictures increase emotional involvement and intent among different consumer groups (Ferrari et al., 2016; Hyun Baek & Kim, 2023). All these findings make image-based design a persuasive tool that triggers intention through both emotional appeal and visual narration.

All these empirical results presented here serve to show that anthropomorphism is a complex strategy of communication, rather than a unitary phenomenon, and that it appeals to various aspects of consumer cognition. The recognition and learning are provided by the appearance-related cues, whereas the emotional and imagistic properties cause more profound forms of engagement, such as narrative resonance and parasocial identification. The gender-related differences also serve to highlight the need to tailor symbolic design to align not only with aesthetic preferences but with the individual cognitive-affective processing styles that define each of the demographic populations.

5.8. Theoretical Contributions

The current study reconsiders the traditional S-O-R triad, suggesting that anthropomorphism in marketing is a complex semiotic machine that extends to the affective and cognitive spaces instead of an affective short cut. By explicating three orthogonal dimensions of appearance, emotionality, and image identity systematically, the research shows that anthropomorphic

marketing stimuli, and in particular figurine-based design, can induce affective resonance and, at the same time, foster structured knowledge, thus augmenting the current understanding of symbolic stimuli as a contributor to brand meaning construction. The current research adds value to the symbolic consumption field since it shows that meaning of products is not only drawn out of use but also emerges when product attributes are involved in symbolic mirroring of human attributes and interpersonal relations. Despite the fact that anthropomorphism as a cognitive interpretive strategy has been the subject of much research, little has been done to establish the role of anthropomorphism in mediating product knowledge. This study hence builds on the current theory by hypothesizing that anthropomorphic stimuli is an affective trigger and can also be used as a sense-making facilitator. Besides, the study demonstrates that products that are instilled with image-based cues, emotional expressions, and anthropomorphic forms form a semiotic triad that includes identity, emotion, and agency.

Another gender multi-group study makes the traditional gender-based dichotomies in consumer behavior studies complicated by showing that male and female groups interpret symbols differently in qualitative ways. Male consumers are more behaviorally sensitive to anthropomorphic emotionality, but strong cognitive processes like the knowledge of products do not vary between genders. The results highlight the subtle interplay between form of symbolic representation and psychological preparedness, and contribute to the theoretical knowledge of gendered semiotics, visual communication theory and embodied brand interaction.

5.8. Managerial Contributions

In terms of management, the study enables practitioners to re-balance anthropomorphic characters as ornamental ornaments to tactical symbolic tools. There is evidence that designers ought to raise clarity of form, emotional story, and symbolic identity as the major design criteria, thus creating both intuitive appeal and cognitive credibility. The current results add significantly to the body of existing work on consumer involvement, especially in the domains characterized by digital avatars, AI interfaces, gamified trading, and virtual branding. Anthropomorphic cues in such contexts have become contact points that cannot be ignored and as such, marketers and designers need to take a semiotic approach when creating anthropomorphic products. Instead of focusing on aesthetic concerns only, stakeholders ought to match visual attributes to identity

stories of the consumers. Emotional aspects, usually obtained by microanimations or plot lines, are used to foster empathy and build symbolic trust.

To maximize emotional efficacy, especially in male consumers, micro-expressions of care, sorrow or resolve must be added, transforming characters into relational proxies, rather than static mascots. At the same time, the strong effect of product knowledge on both genders suggests that informational symbolism of detail, realism, and contextual coherence should be encapsulated in anthropomorphic form to make sensemaking possible. Lastly, the findings urge the marketers to go beyond reductive gender stereotypes by harmonizing symbolic aesthetics with heterogeneous relational processing styles, which are either emotionally immersive or cognitively organizational. Once such symbolic-consumer alignment is attained, anthropomorphic design may move beyond novelty device to transformational branding technique, supporting not only immediate persuasion but also long-term meaning co-creation.

CONCLUSION

The current study questions how people perceive anthropomorphic design of products, and how specific symbolic cues influence purchase intentions. Based on a modified StimulusOrganismResponse framework, the paper explains how collectible goods affect the cognitive and affective pathways of consumer decision-making by incorporating three scales of anthropomorphism, i.e., appearance, expression of emotions, and the realism of the image. The findings indicate that appearance and image based anthropomorphism increase product knowledge, which, in turn, arouse purchase intention by means of structured thinking. On the other hand, emotional anthropomorphism has a direct impact on intentional influence on intention through emotional involvement and symbolic salience. The results prove that anthropomorphic design is a multidimensional communicatory device that appeals to the consumers on the psychological, emotional, and cognitive levels. Further gender-based analysis reveals that the emotional pathway was more evident among male participants which gives the impression that men are more emotionally sensitive when the visual symbolic cues are high. This critique of traditional presumptions widens the current thinking about gendered symbolic interpretation. In general, the research is valuable in the field of design psychology and consumer behaviour because it presents an integrated model that connects symbolic design and consumer cognition and

intention. The empirical evidence explains the rhetorical statement He buys with heart, she buys with thought? by proving that symbolic signals in the design of products reverberate across gendered channels of emotional and cognitive response.

Future studies should take into account anthropomorphism in different categories of products and employ longitudinal or experimental designs to be able to make stronger causal claims. It would be interesting to integrate more variables, e.g. authenticity, uniqueness, or visual appeal to get more insights. The research on gender imbalance and integration of cross-cultural consideration will also enhance the understanding of symbolic influences on the design effect across different consumer environments. Future research may continue the present discussion by analyzing the complex interrelations between anthropomorphism and digital interaction, particularly in virtual or metaverse environments where the brand interaction revolves around character design. The other direction in which researchers can venture is how anthropomorphism interacts with consumer variables such as Need for Cognition (NFC), emotional intelligence, or digital fatigue. Controlling experimental conditions through exaggerated vs. subtle, abstract vs. realistic anthropomorphic characteristics would also help explain symbolic threshold effects. Lifecycle sensitivities with respect to symbolic design may be clarified by cross-generational comparisons between Gen Z and Millennials. Lastly, the narrative-inquiry or ethnographic approach can help to reveal the hidden meanings behind the attachment to character and the joint creation of symbolic value.

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