



The Effect of Virtual Endorsers on Chinese Consumer's Brand Attitude

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Abstract

A brand image endorser plays a crucial role in representing a company's public image. In comparison to celebrity endorsers, virtual endorsers offer the advantage of customization specifically tailored to corporate products or services. As technology advances and marketing methods continue to innovate, the study of consumer attitudes toward brands is gaining more and more attention. Based on Source Model theory and the Meaning Transfer Model, this study investigates the impact of virtual endorsers on consumers' brand attitudes in terms of three key characteristics: cuteness, professionalism, and relevance, as well as the indirect effect of parasocial interaction. A quantitative design was employed, utilizing online questionnaires to collect data through convenience sampling from 439 Chinese consumers over 18 who were familiar with the virtual endorsers. AMOS 23 software was employed to analyze data and test the hypotheses. The largest group of respondents were female consumers aged 26 – 30, with a bachelor's degree and a monthly income of 3,000-5,000 Chinese yuan, working in the private sector. The findings confirm that the cuteness and relevance of a brand's virtual endorser have a positive influence on consumers' brand attitudes. Additionally, parasocial interaction, as a mediating variable, was found to positively mediate the relationship between virtual endorsers (cuteness, professionalism, and relevance) and brand attitudes. This study offers novel perspectives and directions for further investigations related to virtual endorsers, and provides valuable marketing insights on how to create suitable virtual endorser images and enhance consumers' brand attitudes, thereby expanding the scope of advertising communication through virtual endorser endorsements.

Keywords

Advertising communication, Brand attitude, Parasocial interaction, Virtual endorser

Introduction

Choosing the right brand ambassador is a crucial element of advertising communication, warranting careful consideration from companies (Pei, 2022). The variability among potential spokespeople offers brands a range of options and benefits derived from their favorable societal reputations (Peng & Chao, 2011). Employing high-profile individuals for brand promotion is a standard marketing strategy aimed at increasing ad visibility and reach. However, the brand endorsement communication approach has several drawbacks, with the most significant being the unpredictability of celebrity endorsements. Numerous high-profile figures with substantial followings have engaged in improper and unlawful behavior, resulting in considerable damage for brands that have utilized them as endorsers. Additional issues include costly endorsement fees and oversaturation of celebrity promotions, leading to a sense of consumer ennui. Some businesses prioritize fame and exposure over finding an apt match between a spokesperson's characteristics and the product's qualities, creating a discrepancy between the brand and the spokesperson's image. Furthermore, consumers may struggle to identify associations between product offerings and the personalities or traits of endorsers due to insufficient alignment. Comparatively, opting for virtual endorsers may mitigate these issues typically encountered in celebrity-driven advertising campaigns.

Brands often create virtual endorsers based on their distinct attributes, product offerings, and core values, resulting in a more seamless alignment with the brand than actual spokespersons (Pei, 2022). Customers usually connect a virtual endorser to the associated brand promptly. Furthermore, unlike unpredictable celebrity endorsements, virtual endorsers seldom generate adverse publicity, which can aid in preserving and enhancing brand reputation. The perception of brand attitudes by consumers is crucial in advertising communication. A positive brand attitude enables a brand to establish a favorable image in consumers' minds, subsequently setting the groundwork for successful brand promotion. As a result, swiftly and accurately creating a virtual endorser that adds value to the brand has become an essential marketing tactic for numerous businesses today.

However, in terms of virtual endorsers, the academic community has yet to delve deeply into various issues, such as the development and choice of virtual endorser imagery, enhancing their persuasive impact, and their attitude towards consumers on behalf of the brand. Consequently, this study seeks to explore the effect of virtual endorsers on consumer attitudes towards brands, identify any additional influential factors, and examine the interaction mechanism between them to aid in the creation of virtual endorsers strategies. Research concerning brand spokespersons portrayed by virtual imagery offers a degree of innovation, paving the way for theoretical development in this area and supplying companies with practical guidance on selecting virtual endorsers for their brand image.

Literature Review

Source Model Theory

In 1948, renowned American academic Harold Lasswell, a pioneer in communication studies, introduced the distinguished 5W framework (Lasswell, 1948). This model identified five fundamental components in the communication process: the sender (who), the message (what), the receiver (to whom), the channel (through which medium), and the impact (resulting in what effect). This communication process examines the role of the source and its influence on communication outcomes. Generally, two main source models are identified: Source credibility (Hovland, et al., 1953) and Source Attractiveness (McGuire, 1985). The former implies that greater credibility leads to more persuasive communication effects (Hovland, et al., 1953). Ohanian (1990) suggests that a source's credibility consists of trustworthiness, expertise, and attractiveness – three elements that sway consumers' attitudes towards advertising, brand perception, and purchase intention. The Source Attractiveness Model asserts that an audience's familiarity, likability, and similarity with the source significantly affect persuasion and influence (McGuire, 1985). Moreover, a celebrity's physical appeal can also impact persuasion efficacy. Ohanian (1990) developed a novel theoretical framework by synthesizing these two models: Source Model Theory. He put forth three new factors affecting celebrity advertising effectiveness – trustworthiness, expertise, and attractiveness – which better amalgamate prior research findings. This approach elucidates the impact of celebrities on advertising success from their own standpoint and has gained significant scholarly attention. In particular, source credibility, expertise, and attractiveness demonstrate evident positive effects on their persuasiveness, with increased levels in these factors leading to superior persuasive outcomes.

The Meaning Transfer Model

The Meaning Transfer Model was proposed by Grant McCracken (1898). It describes the process of advertising communication as an exchange of information that occurs within the interconnected relationship between a brand, its spokesperson, and the target audience, forming a closed loop comprising these three elements. In essence, advertising communication is a process where a celebrity's persona and reputation migrate to the brand they endorse. When companies enlist celebrities for product endorsements, consumers' admiration for the celebrity gradually shifts towards the brand. Over time, this helps the brand garner goodwill similar to that of the celebrity endorser (Pei, 2022). The meaning transfer in celebrity advertising suggests that when well-known figures receive social recognition through various activities like appearing on TV shows or participating in charitable events, they transfer their acquired social meaning to the audience via their advertisements. In other words, the message gets conveyed to the ad viewers who then

develop a positive impression of the celebrity. Eventually, this favorable sentiment is passed onto the endorsed brand from the celebrity, completing the model of meaning transfer (Pei, 2022). Consequently, according to this model, successful advertising hinges on an effective transmission of the celebrity's personal appeal or attributes to the intended audience.

Virtual Endorsers

Virtual endorsers, as described by Kinney and Ireland (2015), are avatars utilized for representing products or services, possessing distinctive personalities and consistent appearances. Research conducted by Luo and Wang (2011) on virtual endorsers revealed their unique attributes, such as extended life cycles, lower costs, brand specificity, and controllability, distinguishing them from celebrity endorsers. Brown and Stayman (1992) further emphasize the advantages of virtual endorsers, noting that they are not influenced by consumer behavior or speech, which contrasts with celebrity endorsers. Peng and Chao (2011) state that virtual endorsers are custom-designed for corporations, allowing customers to effortlessly form brand associations through their imagery. This exclusiveness is inherent in virtual endorsers. As Garretson and Niedrich (2004) assert, the credibility of virtual endorsers significantly impacts consumer attitudes towards brands. Factors such as displayed expertise and nostalgia play a role in shaping the credibility of these endorsers while relevancy does not notably influence credibility. Chang (2008) subsequently refined the theoretical model proposed by Garretson and Niedrich (2004). The main distinction between the models lies in their extracted factors. Chang's (2008) representation posits that audience perceptions of virtual endorsers are comprised of three elements: cuteness, relevance, and professionalism, with cuteness being the most crucial. This study follows Chang's (2008) tripartite model for categorizing brand virtual endorser characteristics: cuteness, professionalism, and relevance.

Brand Attitude

The concept of attitudinal systems was initially introduced by Krech et al. (1962), who portrayed attitudes as a continuous system composed of cognitive evaluation, emotions, and behavior. Baron (1988) expanded upon Krech's work by creating the ABC model of attitudes, which contends that these attitudes are best summarized through three components: cognitive, affective, and behavioral. As research progresses, attitudes are often viewed as holistic, uninterrupted evaluations of individuals, objects, or ideas, encompassing assessments of strengths and weaknesses, emotional responses, and behavioral inclinations (Engel et al., 1995; Hawkins et al., 2007; Kotler & Keller, 2008). This study posits that behavior strongly reflects emotional attitudes while cognition and emotion serve as intrinsic expressions of attitudes. All three components should be incorporated into the definition of attitudes to more effectively observe and quantify an individual's attitudes. Rossiter et al. (1991) suggest that brand attitude represents a comprehensive evaluation of actual

consumer benefits and the fulfillment of expectations. In determining the criteria for identifying the dimensions of brand attitudes, researchers commonly utilize three distinct hierarchical levels: cognitive, affective, and behavioral. The foundation for this identification originates from Rosenberg et al. (1960). Consequently, this study will divide brand attitudes into three dimensions—brand cognition, brand emotion, and behavioral intention—for measurement research purposes.

Parasocial Interaction

Parasocial interaction, also referred to as "quasi-social" or "pseudo-social interaction," was first incorporated into psychological studies by Horton and Wohl in 1956. This concept describes the way audiences respond to mass media characters as if they were real individuals and establish a seemingly social connection with them. McQuail et al. (1972) initially explored the meaning of parasocial interaction using the Uses and Gratifications Theory, primarily concentrating on audience behavior while viewing television shows. The research findings demonstrated that viewers opted to fulfill their social interaction needs through watching these programs. As audiences engage with TV shows, they establish a relationship resembling social interaction with the characters, generating a reliance similar to that experienced with actual friends. This connection allows them to meet their emotional needs for social engagement. Han et al. (2016) and colleagues assert that such interactions are intentional actions that individuals undertake with mediated personas and messages via a medium to address their interpersonal communication desires. The current study posits that parasocial interaction is a unidirectional exchange between the receiver and sender, encompassing various aspects like orientation, perception, and agency.

Virtual Endorsers and Brand Attitude

During advertising communications, utilizing appealing representatives can boost the enjoyment of consumers and strengthen their impressions of the brand image (Xiao et al., 2018). Considering emotional transference and attitude alterations, positive emotions elicited from the audience toward the source impact their behavior by extending to both the advertisement and the product (Knoll et al., 2015). In advertising interactions, consumers are more inclined to accept cute virtual endorsers with a pleasing appearance, as they can provide psychological relief after a long workday and fulfill their inner needs for contentment. This then leads to their favorable perception of the associated brands (Pei, 2022). Thus,

H1: The cuteness of a virtual endorser positively influences consumers' brand attitude.

Zhang (2013) highlights that, in contrast to celebrity endorsers, virtual endorsers' credibility with consumers does not largely depend on their honesty and objectivity when delivering brand information. Instead, credibility is primarily determined the professionalism of

its external image. For instance, Contec Pharmaceuticals' representative utilizes a capsule image to convey its product offerings to customers. As a medicinal product, Mr. Contec's professional drug image instills trust in consumers. The brand's virtual endorser's expertise fosters a sense of trust and positive brand attitude among customers. Thus,

H2: The professionalism of a virtual endorser positively influences consumers' brand attitude.

Ohanian (1990) posits that for advertising communication to effectively transfer meaning, a spokesperson's image should align with the product they endorse, maximizing their value. If the spokesperson's image clashes with the product, it hampers the advertisement's intended promotional impact. Miller and Allen (2012) discovered that a strong connection between the spokesperson and the endorsed brand facilitated a smoother transfer of the spokesperson's image meaning to consumers, resulting in increased positive sentiment towards the brand. Carsten (2011) contends that endorsers who are consistent with the brand and resemble consumers' perceptions of it can enhance brand image during brand-consumer interactions. This indicates that relevance contributes to building favorable brand attitudes amongst consumers. The Matching Theory suggests that an association between an endorser and a product is crucial for consumers to form positive impressions of the advertised brand, enabling effective advertisement communication. A weak correlation, on the other hand, diminishes endorsement effectiveness and reduces communication efficiency. Thus,

H3: The relevance of a virtual endorser positively influences consumers' brand attitude.

Virtual Endorsers and Parasocial Interaction

Giles (2002) elucidates the trajectory of research concerning parasocial interactions through an examination of social response theory, asserting that audiences are drawn to brands with anthropomorphic representations, sensing the entity's presence in reality, and taking part in social activities. Moreover, Pei (2022) posits that when an individual behaves as a social actor who meets the needs of fellow group members, they are likely to earn the group's favor and trust. As a result, the authoritative role offered by a brand's virtual endorser's professional image can prompt consumers to identify more strongly with the brand and foster positive feelings toward it, thereby establishing a mutually beneficial cycle of trust. In the contemporary world characterized by varied communication platforms and a surge in informational resources, individuals typically gravitate toward engaging in relevant activities and focus on encountering pertinent information. Dunk (2004) discovered that message relevance directly correlates with its utility and, consequently, its acceptance by recipients. Thus,

H4: The cuteness of a virtual endorser positively influences parasocial interaction.

H5: The professionalism of a virtual endorser positively influences parasocial interaction.

H6: The relevance of a virtual endorser positively influences parasocial interaction.

Parasocial Interaction and Consumer Brand Attitudes

Sha and Zhou (2013) conducted an in-depth study on the interaction between audiences and media, specifically focusing on social networking media such as Facebook and microblogs. Their findings revealed that these social interactions directly influence users' purchasing decisions regarding brand products. In particular, parasocial interactions within social networking media were found to have a positive correlation with the shaping of brand relationships. Paul (2005) investigated consumers' willingness to purchase products featured in television commercials and found that when a parasocial interaction is established between consumers and television program hosts, consumers are more likely to proactively seek out and purchase these products, leading to increased frequency of using the communication medium. For instance, purchasing a product seen on a TV show may result in higher frequency of TV usage. Thus,

H7: Parasocial interaction positively influences consumer brand attitudes.

Based on the above discussion of the relationship between virtual advocates, brand attitudes and parasocial interactions, we hypothesize that

H8: Parasocial interactions mediate the relationship between brand attitudes and virtual endorser 8a) cuteness, 8b) professionalism, 8c) relevance.

This study explores the impact of virtual endorsers on consumers' brand attitudes by applying Source Model Theory and The Meaning Transfer Model. Additionally, it introduces the mediating role of parasocial interactions to develop a comprehensive framework model (Figure 1). Previous studies have focused on the direct relationship between human-being brand endorsers and brand attitudes or consumer attitudes (e.g., Ahn, & Bailenson, 2011; Brown, 2020; Lu, 2019; Natithamapimuke & Nuangjamnong, 2022; Wadhwa & Chaihanchanchai, 2021), or by examining brand attitude as a mediating variable (Chey & Piriayapada, 2022; Sallam, 2012; Vidyanata, et al., 2018), few studies have focused on the influence of parasocial interaction. This study, however, makes an innovation in model construction by introducing the variable of parasocial interaction as a mediating variable in order to examine the path of influence of virtual endorsers on brand attitudes. This is to some extent an innovation in the study of brand endorsers represented by virtual images, thus opening up a new path for its theoretical development.

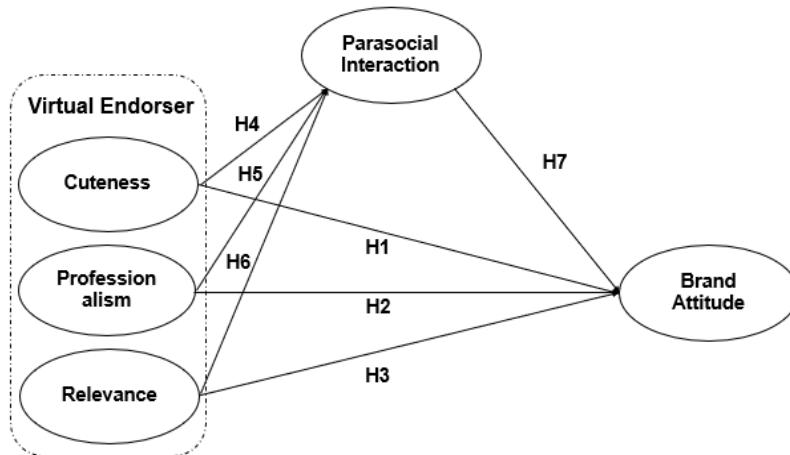


Figure 1 Conceptual Framework

Methodology

Sample and Data Collection

This study employs a quantitative research design, utilizing an online questionnaire to collect data through a convenience sampling approach from Chinese consumers aged 18 and above, who are familiar with and aware of the virtual endorser of the brand. To ensure that respondents were familiar with virtual endorsers, two criteria were developed to screen the questionnaire. First, before starting the questionnaire, respondents were shown 20 images of the most popular virtual endorsers for different types of products in the Chinese market and were asked to select the one that impressed them the most. This selection aimed to incorporate a diverse range of brand types in the study. This diversity in brand representation enhances the generalizability and representativeness of the virtual brand endorsers examined. This approach ensures that the findings and conclusions drawn from the study are not limited to a specific industry but can be applied more broadly across different sectors. Second, participants were required to provide the specific brand name associated with the virtual endorser they had previously selected from the images. This step ensured that respondents accurately identified the brand associated with the virtual endorser, based on their previous selection. If the brand name provided by participants did not match in both questions, the questionnaire was deemed invalid. The sample size for this study was determined using Cochran's formula with a confidence level of 95% and an error term of 5% (Cochran, 1977), resulting in a calculated sample size of 385. The data for this study was collected during the period of February to March in 2023. A total of 460 questionnaires were received. Following data filtering to eliminate insincere or incomplete responses, a sample of 439 valid responses was ultimately used for analysis.

Measurement

The questionnaire consisted of 3 main sections, the first of which consisted of 2 screen questions designed to ensure that respondents had an appropriate level of familiarity with the virtual endorser. The second part was dedicated to collecting basic personal profile information from the participants, including gender, age, occupation, education level, and monthly income. In the third section, participants were asked to provide their opinions on various variables, including the cuteness, professionalism and relevance of a virtual endorser, as well as their brand attitude towards the brand. Respondents evaluated these variables based on their impressions of the most impressive virtual endorser they had ever witnessed and the brand they endorsed, which were previously indicated in the screening questions. The measurement items employed in this study were informed by a comprehensive review of the existing literature. The questionnaire was constructed using the multiple-item method, with each item assessed on a five-point Likert scale ranging from "1=strongly disagree" to "5=strongly agree." Table 1 provides an overview of how measurements from different researchers were adapted for this study.

Table 1 Source of Measurement Item in Questionnaire

Variable	Measurement Items	Source
Cuteness (CU)	I believe that the virtual endorser has a cute appearance.	Mize & Kinney (2008)
	I believe that the virtual endorser is very likable.	
	I think the virtual endorser is funny and interesting.	
	I feel very happy when I see the virtual endorser.	
Professionalism (PR)	I perceive the virtual endorser as highly knowledgeable in their appearance.	Ohanian (1991);
	I perceive the virtual endorser as having a wealth of experience in their appearance.	
	I perceive the virtual endorser as being incredibly skilled in their appearance.	Garretson & Niedrich (2004)
	I perceive the virtual endorser as highly capable in their appearance.	

Table 1 Source of Measurement Item in Questionnaire (continued)

Variable	Measurement Items	Source
Relevance (RE)	I believe that the virtual endorser is relevant to the endorsed brand's product.	Sengupta, et al. (1997); Garretson & Niedrich (2004)
	I think it is reasonable for the virtual endorser to endorse this brand.	
	I think it is appropriate for the virtual endorser to endorse this brand.	
	Overall, I believe that the virtual endorser is well-suited to endorse this brand's products.	
Parasocial Interaction (PI)	I think the virtual endorser is like a good friend.	Rubin, et al. (1985); Auter & Palmgreen (2000); Auter (1992)
	I find the virtual endorser to be quite familiar and relatable.	
	If the virtual endorser appears in different contexts, I would also be interested in following it.	
	I believe that it is worthwhile to invest time in getting to know the virtual endorser.	
Brand Attitude (BA)	The virtual endorser can help me understand the products of the brand they are endorsing.	Pagla & Maria (2014); Bagozzi, et al. (2001); Lafferty (2007)
	I have a sense that the virtual endorser is able to perceive and understand my thoughts.	
	I am very impressed with the brand endorsed by this virtual endorser.	
	I think the brand endorsed by this virtual endorser is good value for money.	
	I think the brand endorsed by this virtual endorser is satisfactory.	
	Compared to similar products, I am more interested in the products of the brand endorsed by this virtual endorser.	
	I am more likely to choose the brand endorsed by this virtual endorser over other brands in the same product category.	
	I have a strong desire to buy the brand endorsed by this virtual endorser.	

Data Analysis Methods

For data analysis, AMOS 23 was employed to conduct confirmatory factor analysis (CFA) in order to assess the reliability, validity, and model fit of the measurement items. Path analysis was used to test all the hypotheses proposed in the study. Additionally, AMOS was also applied to examine the extent of the mediating effect.

Results

Descriptive Statistics

Table 2 reveals that the study participants were mainly female. The largest group of respondents fell within the age range of 26 to 30, constituting more than 40% of the total sample. In terms of education level, the majority of respondents were undergraduates, accounting for 44.65%. Regarding occupation, over 70% of the respondents were employed, with their monthly income predominantly concentrated in the range of 3,000-5,000 Chinese yuan.

Table 2 Demographic Profile

	Variable	Frequency	% (n=439)
Gender	Male	168	38.27%
	Female	271	61.73%
Age	18-25	153	34.85%
	26-30	186	42.37%
Education	31-40	65	14.81%
	41-50	24	5.47%
Education	51 and above	11	2.51%
	High school or below	61	13.90%
Education	Diploma	90	20.50%
	Bachelor's Degree	196	44.65%
Education	Master's Degree	88	20.05%
	Doctoral Degree	4	0.91%
Monthly income (Chinese Yuan)	≤3,000	26	5.92%
	3,001-5,000	176	40.09%
Monthly income (Chinese Yuan)	5,001-8,000	129	29.38%
	8,001-10,000	70	15.95%
Monthly income (Chinese Yuan)	≥10,001	38	8.66%

Table 2 Demographic Profile (continued)

Variable		Frequency	% (n=439)
Occupation	Student	85	19.36%
	Government employee	87	19.82%
	Private employee	223	50.80%
	Own business	36	8.20%
	Other	8	1.82%

Measurement Model

A confirmatory factor analysis (CFA) was conducted to assess the appropriateness of the measurement structure. The results, as shown in Table 3, revealed that the Cronbach's α values for each construct were greater than 0.7, indicating high reliability of the survey instrument (Nunnally, 1978). Moreover, the factor loadings for all the constructs exceeded 0.5, meeting the criterion for item reliability (Hair et al., 1995). The composite reliabilities (CR) for all the constructs were above the 0.7 cutoff, indicating satisfactory construct reliability (Fornell & Larcker, 1981). The average extracted variance (AVE) for each construct exceeded 0.5, indicating convergent validity (Fornell & Larcker, 1981). Lastly, the square root of AVE for each variable was compared to the correlation coefficient between any pair of constructs to confirm discriminant validity (Table 4). The square root of AVE for each variable was found to be higher than the corresponding correlation coefficient, indicating good discriminant validity.

Table 3 Results of Validity and Reliability Analysis

Construct	Indicators	Factor	AVE	CR	Cronbach's Alpha
		Loadings			
Cuteness (CU)	CU1	0.815			
	CU2	0.897			
	CU3	0.827	0.675	0.892	0.894
	CU4	0.740			
Professionalism (PR)	PR1	0.773			
	PR2	0.881			
	PR3	0.858	0.641	0.876	0.892
	PR4	0.674			
Relevance (RE)	RE1	0.728			
	RE2	0.814	0.685	0.896	0.901
	RE3	0.914			

Table 3 Results of Validity and Reliability Analysis (Continued)

Construct	Indicators	Factor	AVE	CR	Cronbach's Alpha
		Loadings			
Parasocial Interaction (PI)	RE4	0.843			
	PI1	0.713			
	PI2	0.694			
	PI3	0.825			
	PI4	0.766	0.550	0.880	0.893
	PI5	0.737			
	PI6	0.706			
Brand Attitude (BA)	BA1	0.737			
	BA2	0.702			
	BA3	0.855			
	BA4	0.793	0.587	0.895	0.915
	BA5	0.773			
	BA6	0.726			

Table 4 Discriminant Validity

	(1)	(2)	(3)	(4)	(5)
(1) CU	.822				
(2) PR	.469	.801			
(3) RE	.239	.342	.828		
(4) PI	.440	.669	.358	.742	
(5) BA	.672	.576	.666	.517	.766

Note: CU= Cuteness, PR= Professionalism, RE= Relevance, PI= Parasocial Interaction, BA= Brand Attitude

Structural Model

The software utilized for conducting structural equation modeling was AMOS23.0. The adequacy of the model fit was evaluated using six key indices. As per the results presented in Table 5, all the indices met their threshold values, indicating a satisfactory fit of the model and suggesting the acceptability of the structural model.

Table 5 Fit Indices of Measurement and Structural Models

Fit indices	χ^2 / df	GFI	AGFI	IFI	TFI	CFI	RMSEA
Recommended Values	<3	>0.9	>0.8	>0.9	>0.9	>0.9	<0.05
Structural Model	2.578	0.925	0.902	0.948	0.937	0.948	0.042

Hypothesis Testing

The results of the seven hypothesis tests are presented in Table 6. For H1, H2 and H3, significant and positive correlations were observed between brand attitude and both cuteness of virtual endorser ($\beta=0.195$, $p<0.05$) and relevance ($\beta=0.158$, $p<0.05$), however, professionalism was not found to have a positive effect on attitudes ($\beta=0.013$, $p>0.05$), thus supporting H1 and H3, while rejecting H2. Furthermore, a positive association was found between relationship parasocial interaction and cuteness ($\beta=0.140$, $p<0.01$), professionalism ($\beta=0.179$, $p<0.01$), and relevance ($\beta=0.277$, $p<0.001$), thus supporting H4, H5, and H6. Furthermore, when examining H7, it was confirmed that brand attitude was positively correlated with parasocial interaction ($\beta=0.354$, $p<0.001$), thus fully verifying H7.

Table 6 Result of Hypothesis Test

Hypothesis	Path	β	Unstd.	S.E.	C.R.	p	Result
H1	CU→BA	0.195	0.209	0.090	2.311	*	Supported
H2	PR→BA	0.013	0.016	0.067	0.241	.809	Rejected
H3	RE→BA	0.158	0.196	0.095	2.054	*	Supported
H4	CU→PI	0.140	0.119	0.039	3.046	**	Supported
H5	PR→PI	0.179	0.163	0.062	2.618	**	Supported
H6	RE→PI	0.277	0.271	0.067	4.080	***	Supported
H7	PI→BA	0.354	0.371	0.069	5.335	***	Supported

Note: CU= Cuteness, PR= Professionalism, RE= Relevance, PI= Parasocial Interaction, BA= Brand Attitude; * $P<0.05$; ** $P<0.01$; *** $P<0.001$

Mediation Effect

Table 7 presents the results of the mediation analysis, which examined the role of parasocial interaction as a mediator between the independent variables of virtual endorsers (cuteness, professionalism, and relevance) and the dependent variable of customer brand attitude. The bootstrapping process, widely recognized as an effective method for testing mediation and other intervening effects (Biesanz, et al., 2010), was used to assess the mediation effects. A total of 5000 samples were drawn to estimate the bias-corrected bootstrapping confidence interval at a 95% level of confidence. The presence of a mediating

effect was determined by checking if the confidence interval of the estimated effect excluded zero, indicating significance (Hayes, 2009).

The findings from Table 7 reveal that parasocial interaction plays a significant partially mediating role in the relationship between cuteness and brand attitude, with a 95% CI of (0.005, 0.079), which does not include zero. Similarly, parasocial interaction also serves as a significant partial mediator in the relationship between relevance and brand attitude, with a 95% CI of (0.001, 0.073), excluding zero. As for professionalism, parasocial interaction demonstrates a significant fully mediating role in the relationship between professionalism and brand attitude, with a 95% CI of (0.006, 0.091), excluding zero. Therefore, the findings support hypotheses H8a, H8b, and H8c.

Table 7 Analysis of Mediating Effect

Paths	Effect	Bias-corrected 95% CI		Whether Mediating or not?
		Lower	Upper	
Indirect Effect				
H8a: CU→PI→BA	0.050	0.005	0.079	Yes (partially mediating)
H8b: PR→PI→BA	0.063	0.006	0.091	Yes (fully mediating)
H8c: RE→PI→BA	0.098	0.001	0.073	Yes (partially mediating)

Note: CU= Cuteness, PR= Professionalism, RE= Relevance, PI= Parasocial Interaction, BA= Brand Attitude

Discussion

In the current competitive market landscape, brands are faced with the need to invest increased efforts in brand promotion to gain a larger share of the market. This not only involves establishing a positive and trustworthy brand image, but also adopting innovative strategies to connect with consumers. One such strategy is the utilization of virtual endorsers as an alternative to traditional celebrity endorsements in order to create and convey a positive brand image. When selecting a virtual endorser, brands should carefully consider various dimensions, including cuteness, professionalism, and relevance of the virtual endorser to their brand. By systematically evaluating these dimensions, brands can create a virtual endorser image that aligns with their brand's promotional objectives. This approach allows consumers to establish a positive brand attitude through parasocial interactions with the virtual endorser image, ultimately enhancing the communication effectiveness of advertising efforts.

This study draws conclusions based on a model that incorporates theories from the fields of communication, psychology, and management, utilizing data obtained from a sample of 439 respondents who evaluated virtual endorsers and the brands they endorse. The findings reveal that the cute anthropomorphic image of the virtual endorser directly

influences consumers' favorable feelings towards the endorsed brand, as opposed to a featureless appearance. In other words, the cuteness of the virtual endorser significantly impacts consumers' attitudes towards the brand, enhancing their brand perception during the advertising communication process and stimulating their intentions to purchase or recommend the endorsed products. This finding is consistent with previous research which has focused on the role of cute virtual endorsers in shaping consumers' brand attitudes (e.g., Knoll et al., 2015; Pei, 2022; Xiao et al., 2018).

Furthermore, virtual endorser relevance is identified as a crucial factor that influences consumers' attitudes towards the brand. The research findings indicate that the level of relevance between the virtual endorser and the endorsed brand, based on the theory of emotional transfer in communication, plays a significant role in helping consumers perceive the meaning and value conveyed by the virtual endorser. As a result, positive feelings towards the endorsed brand are fostered among consumers, as they associate the brand with the virtual endorser in a meaningful and relevant manner. This finding is consistent with previous research on the role of relevance in virtual endorsement (e.g., Miller & Allen, 2012; Ohanian, 1990; Pei, 2022).

However, this study reveals that virtual endorsers do not have a direct positive effect on brand attitudes due to their high degree of professionalism and expertise. In other words, consumers' attitudes towards brands are not influenced by the virtual endorsers' brand knowledge. Nevertheless, the study highlights that brand attitude can be indirectly influenced through the mediating role of parasocial interaction, which refers to the one-sided relationship consumers form with virtual endorsers. Parasocial interaction acts as a mediating variable in the relationship between virtual endorsers' expertise and brand attitudes. Additionally, cuteness and relevance, as virtual endorser characteristic variables, not only have a direct positive impact on brand attitudes, but parasocial interaction also plays a mediating role in their relationship. This finding is supported by Pei (2022) who studied the role of parasocial interaction in shaping consumers' brand attitudes. This finding is also consistent with the findings of Hankunaseth and Nadee (2022). Youtubers have adopted a number of strategies to gain more attention from their audience. One of these strategies is Youtubers or channel collaborations where more than one content creator appears in the content. Hankunaseth and Nadee (2022) investigated the impact of such collaborative events on audience engagement and found that most collaborations are adopted by professional channels. In addition, collaborations between Youtubers can lead to an increase in views and followers. The current study also reveals that the professionalism of virtual endorsers positively affects parasocial interaction and thus influences consumers' brand attitudes. Thus, parasocial interaction fully mediates the relationship between virtual endorser's expertise and brand attitudes.

Practical Implications and Theoretical Contributions

Social media has rapidly evolved, and advertising has shifted from traditional media such as TV and newspapers to various social media platforms for content delivery. This has led to an increasing use of virtual brand endorsers in advertising communications. Consumer brand attitudes play a crucial role in the acceptance of communication during brand advertising. With consumers becoming more mature and rational in their consumption behaviors, and the diminishing blind trust in celebrity endorsers due to negative incidents, the findings of this study can offer valuable insights for brand managers in choosing virtual endorsers. Firstly, companies should create a virtual endorser with a cute and distinctive image. Consumers are often drawn to virtual cartoon images with cute appearances, such as the QQ penguin, which can serve as a reference for companies in designing or selecting virtual endorsers. By leveraging the attraction of cuteness in virtual endorsers, companies can create a positive brand impression among consumers and turn it into brand benefits. Secondly, precise brand positioning is crucial for creating a virtual endorser that is highly relevant to the brand. When selecting a virtual endorser, the principle of "relevance" should be followed, so that the brand's values, historical origin, and brand culture are closely aligned with the virtual endorser to maximize the advertising effect. Finally, companies should maximize parasocial interaction between consumers and the virtual endorser. Positive consumer attitudes can be enhanced through the process of parasocial interaction, where companies can increase the exposure of the virtual endorser to the audience and create derivative products related to the virtual endorser. This can increase brand traffic and strengthen social interactions between consumers and virtual endorsers, leading to heightened consumer perceptions and emotional ties with virtual endorsers. Besides, companies can rely on derivative products related to the virtual endorser, such as distributing toy dolls and stickers, in their product promotion activities. This can deepen consumers' impression of the virtual endorser while gaining their goodwill, helping to enhance brand association and brand memory, and shaping positive brand attitudes among consumers. Optimizing consumers' experience of the virtual endorser can be achieved by fully engaging their senses and promoting emotional preference, thus encouraging active attention to brand-related information. Moreover, to maintain parasocial interaction between consumers and virtual endorsers, brands can appeal to consumers' values through representative images or symbols, creating emotional resonance and deepening their sense of brand identity and trust. This can transfer the emotional connection between consumers and virtual endorsers to advertising communication and endorsement of brands or products.

In terms of theoretical contribution, this study contributes by investigating the underlying mechanism of how virtual endorsers influence consumers' brand attitudes. Previous research has predominantly examined the direct relationship between real brand

endorsers and brand attitudes, or has considered brand attitudes as a mediating variable. In contrast, this study introduces a novel approach by incorporating parasocial interactions to explore the pathway through which virtual endorsers impact brand attitudes. By taking into account parasocial interactions, which refer to the one-sided relationships that consumers form with virtual endorsers, this study offers a more nuanced understanding of how virtual endorsers can impact consumers' brand attitudes. The findings of this study have the potential to contribute to the existing literature on brand endorsement and advertising communication by shedding light on the underlying psychological mechanisms through which virtual endorsers can shape consumers' brand attitudes.

Limitations and Future Research Directions

This study has a few limitations. Firstly, the sample scope of this research is limited to China, which means that the analysis results of the questionnaire data may not reflect the brand attitudes of foreign consumers. In future studies, data collection could be expanded to a broader scope, encompassing different cultures, regions, and countries, in order to enhance the generalizability of the findings. Moreover, different types of brands and products could be explored to expose different moderating effects on brand attitudes. Secondly, this study solely employed quantitative analysis. To gain a deeper understanding of the impact of virtual brand advocates on consumers' brand attitudes, future research could consider incorporating qualitative or mixed research methods. Thirdly, this study relied only on convenience sampling, which may introduce bias and limit the generalizability of the findings. It is known that a more representative sample can enhance the validity of a study. Therefore, future studies could rely on other sampling methods or a combination of several sampling methods as a way to enhance the validity of the sample. Furthermore, the data collection method in this study involved online questionnaires and self-reporting by participants. This method might introduce response bias and rely on subjective interpretation by participants, which may affect the accuracy of the results. Future scholars may consider using both online and offline data collection, or longitudinal studies to identify possible changes and avoid bias due to over-reliance on self-reporting, as a way to enhance the accuracy of study results. Lastly, this study only examined the relationship between virtual endorsers and brand attitudes from the perspective of their characteristics. In future studies, researchers could explore the relationship between virtual endorsers and consumers' brand attitudes based on different advertising endorsement models. For instance, the type of endorsement a virtual endorser makes for a brand, such as through commercials or social media, could be investigated to determine which type of endorsement is more effective in improving the communication impact of brand advertising. In conclusion, this study might be just a starting point, and further research is necessary to validate and expand upon its findings. These potential limitations highlight areas for improvement and potential directions for future research.

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