



How Anthropomorphic Features of Virtual Influencers Affect Generation Z Purchase Intentions Through Credibility

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Abstract. Nowadays, virtual images are widely used in film making, entertainment, social media as well as advertising and marketing. This article focuses on how the anthropomorphic features of virtual influencers affect purchase intentions of consumer, and explores the mediating effect of perceived credibility in this context. This empirical study reveals that the anthropomorphic characteristics of virtual influencers have a positive effect on Generation Z and can enhance purchase intention through the mediating effect of perceived credibility. This study filled a gap in research on age-specific consumer attitudes towards virtual influencers and enriches theories on consumer purchasing behaviour, inspiring companies that virtual influencers offer cost-effective, continuous marketing solutions, by tailoring their appearance and personality to different scenarios, they enhance credibility and influence consumer decisions. Additionally, virtual influencers foster brand loyalty and cultural connection, especially among Generation Z, by aligning with consumers' identities and emotions.

Keywords: Source credibility, Virtual influencer, Anthropomorphism, Purchase intention, Generation Z.

1 Introduction

In the background of the rapid development of digital marketing and re-shaping our daily life with artificial intelligence as well as automatic robots, virtual influencers are widely used in conversational marketing and advertising to satisfied different need of digital users and purchase intensions. Being the Internet natives, Generation Z is a group of people who born between 1995 and the late 2000, spending a period time in using digital tools as well as multiple digital communities. They usually follow a group of celebrities in the social media and purchase the products which endorsed by them and people found that digital influencers are more attractive from them. However, some issues like untimely messaging and inconsistent message audiences making the virtual influencers being inefficient and unpopular.

The research between virtual influencers and its autonomy shown that their audience perceived independence are significant for people perceived credibility and trustworthiness for the exposed influencers. Although the virtual influencers with a near-perfect exterior and a customized persona which can overcome the limitation of single individual and attract people attention with its uniqueness [11], some internal factors like culture, reference groups, and demographic factors that may have internally impact on people's attitude toward virtual influencers and the outcome of transformation. In addition, Lou et al illustrated that most interviewees interacted with virtual influencers in a similar way to social media influencers, but trusted social media influencers more and more willing to purchase products that endorsed by them [10].

The main goal for this current research is quantitatively exploring how the perceptions of virtual influencers and the relationships formed with virtual influencers from Generation Z attribute on explaining the mechanism of the difference in their attitudes toward virtual influencers compared with human influencers, and the potential improvement for future purchase intention, when the virtual influencers have recommendation with relevant products or brands.

2 Hypothesis Development

Previous research has demonstrated that products with anthropomorphic features have an indirect effect on people's purchase intentions and Han results of the empirical study proved that anthropomorphism plays a significant and positive role in moulding customers' intentions to make commercial purchases with the virtual chatbots [5]. Therefore, we can hypothesize that: **H1 Perceived anthropomorphism can have a positive effect on Generation Z's purchase intention**

The expertise of virtual influencers may be equivalent given their objectivity, complete reliance on progressive technology, thus they can be trusted with a higher degree in providing accurate, reliable as well as in-time information when they be perceived as virtual influencers with characteristics of anthropomorphic [10]. Trustworthiness is crucial to maintain sustainable interactions and the trustworthiness felt by audience during the communication with virtual influencers according to their familiarity level within the new technology [3]. Therefore, we hypothesize that: **H2 Perceived anthropomorphism can have a positive effect on perceived influencer's credibility**

The rise and widespread use of virtual influencers has had a significant impact on the decision-making process of viewers or consumers, and in particular, the credibility of virtual influencers contributes significantly to people's purchase intention [4]. With the use of a large number of avatars in brand endorsements, these human-like virtual influencers are generally visually appealing and to some extent induce social and behavioural changes in the audience [1,9]. Therefore, we hypothesize that: **H3 Perceived credibility of virtual influencers is related with Generation Z's purchase intention**

General speaking, we could hypothesize that: **H4 Perceived credibility of virtual influencers mediated the effect between anthropomorphism and Generation Z's purchase intention.**

3 Methodology

The questionnaire survey format will be adopted by researchers, and the potential responders will come from Sojump (<https://www.sojump.com>). For item “anthropomorphism”, researcher adapted with items developed from Bartneck et al. [2]. Variable of “Credibility” will be measured with the scale developed from Hsieh & Li and Jansom et al. [7,8]. The dependent variable of “purchase intension” will be measured by four-item scale applied with the previous scales [12]. Quota sampling method was applied in the following study to collect respondents attitudes, as only the people who have experience of social media as well as correct cognitive of virtual influencer, and followed an virtual influencer, were included in this research. Our sample size was 208 after part of the samples were deleted.

4 Result and Discussion

4.1 Reliability and Validity Test

It was integral to fulfill the test of the questionnaire for reliability and validity before validating the fit of the SEM model. Three standard index including Cronbach’s alpha, Composite Reliability (CR), and Convergent Validity Index, and commonly it can be evaluated by the volume of Average Variance Extracted (AVE). Generally, scholars suggested that when the volume of Cronbach’s alpha exceed 0.8, value of CR larger than 0.7 as well as volume of AVE larger than 0.5, than it is considered acceptable for validity [6]. With the statistical result, it shown that all indicates fit the suggested volume (shown in Table 1 & Table 2). Those consequences illustrated that the measurement scales that we structured and exercised were reliability acceptable and maintained an acceptable internal consistency. Convergent Validity was evaluated with the AVE index. In detail, researcher also used the expert consultations method to reduce incompatibility of questionnaire content as well as the whole model. For the discriminant validity, which can be tested by make comparison between the square root of the AVE volume with the internal correlation coefficients. Based on the proposition from scholars, when the number of correlation coefficient which at the middle of the other variables shown values less than the AVE square root, than it can be considered to have a good discriminant variability. The result is generally larger than both the other values in the columns (Table 3). Generally that the theoretical model structured in this empirical research displayed the discriminant validity with an appropriate level.

The diagonal line with bold numbers represents the rooting number of AVE value of the factor.

Table 1. Reliability And Validity Test

Construct		Mean	St.D	N	Cronbach's Alpha
ANT	ANT1	4.375	1.776	208	0.895
	ANT2	4.221	1.630	208	

	ANT3	4.188	1.584	208		
	ANT4	4.106	1.713	208		
	ANT5	4.231	1.605	208		
CRE	CRE1	4.13	1.862	208		
	CRE2	4.187	1.725	208		
	CRE3	4.111	1.714	208	0.919	
	CRE4	4.288	1.720	208		
	CRE5	4.163	1.740	208		
	CRE6	4.043	1.776	208		
PI	PI1	4.423	1.821	208		0.864
	PI2	4.341	1.678	208		
	PI3	4.433	1.695	208		
	PI4	4.471	1.668	208		

Table 2. Discriminant Validity Test

Construct	Unstd.	S . E	. C . R . P	S t d . S	M	CA	V	EC	R
ANT1<---A	N	T1.190	0.090	13.189	***	0.841	0.7	0.7	0.7
ANT2<---A	N	T0.948	0.086	11.086	***	0.731	0.5	0.3	0.4
ANT3<---A	N	T1.000				0.793	0.6	0.2	0.9
ANT4<---A	N	T1.117	0.088	12.751	***	0.818	0.6	0.6	0.9
ANT5<---A	N	T1.012	0.083	12.244	***	0.792	0.6	0.2	0.7
CRE1<---C	R	E1.000				0.802	0.6	0.4	0.3
CRE2<---C	R	E0.944	0.071	13.272	***	0.817	0.6	0.6	0.7
CRE3<---C	R	E0.951	0.070	13.522	***	0.829	0.6	0.8	0.7
CRE4<---C	R	E0.879	0.073	12.107	***	0.763	0.5	0.8	0.9
CRE5<---C	R	E0.940	0.072	13.038	***	0.807	0.6	0.5	0.1
CRE6<---C	R	E0.989	0.073	13.589	***	0.832	0.6	0.9	0.2
PI 1<---P	I	I1.000				0.816	0.6	0.6	0.6
PI 2<---P	I	I0.853	0.074	11.598	***	0.756	0.5	0.7	0.2
PI 3<---P	I	I0.906	0.074	12.324	***	0.795	0.6	0.3	0.6
PI 4<---P	I	I0.870	0.073	11.962	***	0.775	0.6	0.0	0.1

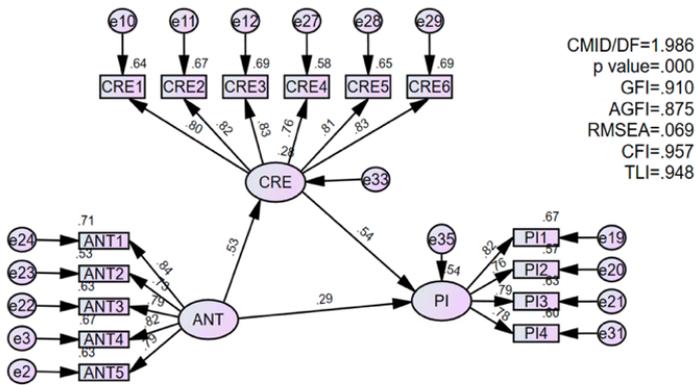
Note: *P<0.05 **P<0.01 ***p<0.001

Table 3. Convergent Validity Test

	AVE	PI	CRE	ANT
PI	0.618	0.786		
CRE	0.654	0.694***	0.809	
ANT	0.633	0.575***	0.529***	0.796

4.2 Structure model

With Amos 26.0 calculation of the path coefficients and variance of the structure model validation, and the explanation of each variable with Squared Multiple Correlation (see Fig. 1). The consequences and the steps for proving the mediation effect, and all assumptions from H1 to H4 were verified. With the results shown in Table 4, the anthropomorphism of the virtual influencer (Std.=0.288, $p<0.001$) had shown significantly positive influence on audience's purchase intention. At the same time, the anthropomorphism of the virtual influencer also has the significantly influenced on audience perceived credibility of the virtual influencers (Std.=0.529, $p<0.0010$). In addition, audience perception of credibility (Std.=0.542, $p<0.0010$) had a more significant positive influence with purchase intention from the exposure audiences or fans group, compared with the direct influence from audience's anthropomorphism perception. Therefore, hypotheses H1–H4 were theoretically supposed. Overall, with the result from Amos 26.0, it is estimated that the predictors of credibility explain 28 percent of its variance, while it is estimated that the predictors of purchase intention explain 54.2 percent of its variance, or they fit accounted for 54.2% of the variance in the purchase intention, which is the level of anthropomorphism of the virtual influencers, and the anthropomorphism level as well as the moderative variable of credibility, respectively.



Note: ANT=Anthropomorphism, CRE=Credibility, PI=Purchase Intension

Fig. 1. Structured Model

Table 4. Model Goodness of Fit Index

			Unstd.	S.E.	C.R.	P	Std.	R ²
PI	<---	ANT	0.341	0.088	3.869	***	0.288	
PI	<---	CRE	0.539	0.080	6.759	***	0.542	0.542
CRE	<---	ANT	0.629	0.092	6.835	***	0.529	0.280

5 Conclusion

By analysing the positive influence of virtual influencers anthropomorphic features on viewers' or followers' perceived credibility and the positive influence of perceived credibility on purchase intention, and by comparing the significance indexes of the three, we verified the mediating effect of perceived credibility. These findings not only theoretically broaden the dimensions of credibility theory in the digital age and the behavioural characteristics of age-specific groups, but also provide theoretical support and effective guidance for companies or brands who selected or developing virtual influencers as their image representative to adopt different forms of anthropomorphic virtual influencers in the selection, design and promotion of virtual influencers to match the maximum their rate of return.

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