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AN EMPIRICAL RESEARCH ON THE INFLUENCING FACTORS OF CUTENESS PERCEPTION: TAKING LIPSTICK PRODUCTS AS AN EXAMPLE

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Abstract. *At the age of the sales climbing of lipstick products, it is of great significance to study the influencing factors and management implications of cuteness perception. The paper combs and summarizes the existing influencing factors of cuteness perception and the views obtained from in-depth interviews, designs the initial questionnaire's items of the influencing factors of cuteness perception, obtains the original data through questionnaire distribution and uses statistical software to analyze the original data, and finally gets the scale of the influencing factors of cuteness perception which consists of twelve items and two dimensions. The two dimensions are naive personality and sensory experience. According to the standardized path coefficients in the structural equation model, naive personality or sensory experience has a significant positive impact on lipstick products' cuteness perception (among them, the impact of naive personality is greater). Therefore, when designing lipstick products, cosmetics enterprises should not only shape naive brand personality, but also enhance sensory experience of customers.*
Keywords: Lipstick products, Cuteness perception, Brand personality, Sensory experience

1. **Introduction.** In China, cosmetics industry is hot and growing rapidly. As a representative product of cosmetics, lipstick gains a significant share of cosmetics market and has become one of the fastest growing items. From 2015 to 2019, the market size of lipstick in China increased from 6.19 billion yuan to 17.8 billion yuan, with a compound growth rate of 30.2%. The prosperous industry attracts a large number of brands to enter, but also makes brand merchants gradually realize that the energy of customers is limited, which makes them only focus on the products which are flashy. Therefore, the brands begin to use cute elements in lipstick marketing. In 2019, Shu Uemura launched Shu Uemura × Pikachu Christmas lipstick, which enjoyed high favor among people. At the beginning of 2021, MAC cooperated with KAKAO FRIENDS, putting out a joint series of lipstick products, shouting the slogan of "high cuteness attacking". So far, KAKAO FRIENDS, a series of cute cartoon characters, have helped MAC achieve a monthly sales of more than 60000 pieces in Tmall flagship store, ranking fourth in Tmall lipstick sales list.

In fact, the success of these brands is not due to fortune. Some studies showed that cuteness perception has the effects of eliciting pleasant emotions resulting in feelings of entertainment [1], increasing the market acceptance of the product [2] as well as improving customer loyalty [3,4]. Therefore, it is necessary to explore the influencing factors and determine the antecedent variables of cuteness perception of lipstick products. From the present research condition, researchers have done some research on the influencing factors of cuteness perception, and some results have been gotten. However, no one has used

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lipstick products as examples to explore how the influencing factors of cuteness perception should be measured.

Due to the excellent sales performance of the lipstick products which are with cute elements and the lack of research on the influencing factors of cuteness perception of lipstick products, it is of great significance to study the influencing factors and management implications of cuteness perception. This paper consists of five parts: introduction, literature review, antecedents' scale design, data analysis and conclusions, using the methods of reviewing literature, in-depth interview, questionnaire distribution and data analysis by SPSS 25.0 and LISREL 8.70. In the end, this paper gets the scale of the influencing factors of cuteness perception. It not only fills the research gap of the influencing factors of cuteness perception, but also puts forward targeted suggestions for lipstick product design in cosmetic enterprises.

2. **Literature Review.**

2.1. **The concept of cuteness perception.** Cuteness (cuteness perception) was first formally proposed by Austrian zoologist Lorenz in 1943. Cuteness was defined as visual perception to the physical or behavioral characteristics, which had ones of childishness [5]. With the passage of time, cuteness perception has gotten the attention of some scholars gradually. Hence, the connotation of cuteness perception has been enriched and developed, and forms a series of related theory.

Some researchers think that cuteness exists independently and will not be influenced by people. For example, Hellen and Sääksjärvi believed that cuteness is generally defined as being attractive in an adorable or endearing way [6]. Some researchers thought that cuteness is a kind of feeling and emotion, which is attached to human. The representative's view was that cuteness includes the feelings and emotions that are caused by experiencing something that is charming, cheerful, happy, funny, or something that is very sweet, innocent, or pure, which can stimulate a feeling of adoration, sympathy, or the care response [7]. In addition, Dale pointed out that cuteness is a physical, affective response – a feeling we may refer to as the "Aww" factor – to the set of visual and behavioural attributes [8]. The above definitions illustrated different understandings of cuteness perception from different perspectives. Different researchers held different views on cuteness perception because of their different perspectives, different ages, different industries or different disciplines. Based on the characteristics of lipstick products, this paper considers that cuteness perception of lipstick products refers to an attractive positive user perception brought to customers by the newborns, capricious humor or funny features of the product or brand.

2.2. **The influencing factors of cuteness perception.** The research on the influencing factors has been in a vacuum for a long time since Lorenz first proposed cuteness in 1943, which in academic circles has been concentrated since the 1990s. At first, researchers regarded cuteness as an external factor, and the research on the influencing factors only focused on appearance design, mainly reflected in feminine designs [9,10] and animal elements [11]. They believed that products with feminine designs (such as women's favorite colors or patterns) or animal elements can make people feel cute. As we enter the 21st century, the research on the influencing factors of cuteness perception has developed rapidly. On the one hand, researchers continue to deepen the research on the influence of appearance design on cuteness perception. On the other hand, they transfer their gaze to brand personality and interaction with customers. In terms of appearance design, except feminine design and animal elements, researchers also pointed out that small size [12,13], light colors [12,14], brighter colors [7] and designs associated with babyfaces [15] also make people feel cute; in terms of brand personality, when a brand has such characteristics as "approachable, warm" [12], "naive, open" [9,16] or "honest and lack of vigilance" [15,17] and other similar brand personality it will increase the customer's cuteness perception;

in terms of interaction with customer, researchers pointed out that a brand or product name associated with animals (e.g., big white rabbit candy) [18,19] or having a name of youth (e.g., baby, and mini) [12], or using reduplicative words [20,21] and onomatopoeia [22] frequently in communication plays a similar role; in addition, some researchers have proposed that products or brands reflecting the need to be cared for/needed [14,23] can also obtain customers' cuteness perception.

In the second decade of 21st century, Nenkov and Scott have aroused most attention among the researchers of the cuteness perception in academic circles. They put forward that there are not only kindchenschema cuteness, but also whimscial cuteness. This is a milestone in the research of cuteness perception, which overturns the previous cognition that cuteness is always related to newborns, and points out a new direction for the research of the influencing factors of cuteness perception. Except new dimension, they also proposed that cute products having whimsical nature may trigger certain consumer responses as a function of whimsical cuteness, such as related design and brand personality [24]. What is more, some scholars pointed out that perceptions of whimsical cuteness can also be evoked by using rounded shapes [25,26]. Last but not least, the appearance with the greater width-to-height ratio [27] and simplicity [28] were also proposed as the influencing factors of kindchenschema cuteness in this period.

3. **Antecedents' Scale Design.**

3.1. **Related literature.**

As shown in Table 1, combing the related literature of the influencing factors (antecedents) of cuteness perception and considering the specific characteristics of lipstick products, the paper designs 17 items of the scale of the influencing factors of cuteness perception.

3.2. **In-depth interview.**

After related literature review, we conducted an in-depth interview. Through the in-depth interview with 35 customers who had purchased and used lipstick, we hoped that we can understand their experience and feelings in the process of purchasing and using lipstick as well as those factors triggering their cuteness perception. The age of respondents was mainly concentrated in the post-80s, post-90s and post-00s, and consisted of company staffs, students, doctors, civil servants, etc. Among them, male respondents accounted for 25% and female respondents accounted for 75%. In a word, the respondents belong to the main user group of lipstick products, and these samples have a good representation. During the interview, we also invited the respondents to fill in an open-ended questionnaire on cuteness perception of lipstick products, which mainly was used to record the lipstick brands that consumers had purchased and the influencing factors that had triggered their cuteness perception. In order to collect as much information as possible, each respondent was asked to write five influencing factors at least.

After the interview, the results of the interview and the questionnaire information were collected, summarized and sorted. The ambiguous answers, repeated answers and irrelevant answers were deleted. Among the remaining answers, 8 items with the highest frequency were selected, which were packaging (package material), shell (appearance), paste printing (pattern), texture (feel), shape, color, spokesperson (anchor, model) and price. The above answers were integrated and the following questions were designed according to these answers (see Table 2 for details).

By integrating the items in Table 1 and Table 2, the initial scale of the influencing factors of cuteness perception was formed. According to the Likert 5-Level Scale, 'very dissatisfied', 'dissatisfied', 'ordinary', 'satisfied', and 'very satisfied' were assigned a value of 1-5 in turn. Finally, the initial questionnaire was generated, which consists of 29 items. In addition, in order to verify the influence relationship between the above factors and cuteness perception, the overall scale of cuteness perception proposed by Nenkov and Scott was added to the questionnaire, using three items of "cute", "adorable" and "endearing"

TABLE 1. Measurement items of the influencing factors of cuteness perception

Items	Author(s)
N1. This lipstick is mellow and full.	Cho et al. [25], Schnurr [26] Cho [27]
N2. This lipstick design is associated with babyfaces.	Gorn et al. [15]
N3. This lipstick is small in size.	Yano [12], Lee and Yan [13]
N4. This lipstick uses light colors in its design (e.g., goose yellow, and pink blue).	Yano [12], Xie et al. [14]
N5. This lipstick uses brighter colors in its design.	Cheok [7]
N6. This lipstick has a graceful design.	Kinsella [9], Locher [10]
N7. This lipstick is designed with animal elements.	Herzog et al. [11]
N8. The name of this lipstick is associated with animals.	Brown [18], Vandenbos [19]
N9. This lipstick has a whimsical design.	Nenkov and Scott [24]
N10. This lipstick has a name of youth (for example, baby, and mini).	Yano [12]
N11. When communicating with customers, the brand often uses reduplicative words (e.g., yaya, and heihei).	Shaffer and Kipp [20], Argo et al. [21]
N12. When communicating with customers, the brand often uses onomatopoeia (e.g., poof).	Klink [22]
N13. I feel that this brand is in a weak position in the market and needs my support.	Marcus [23]
N14. This brand makes me feel approachable, warm.	Yano [12]
N15. This brand makes me feel naive, open.	Kinsella [9], Healy and Beverland [16]
N16. This brand makes me think that it is honest and lack of vigilance.	Gorn et al. [15], Aaker [17]
N17. This lipstick brand has whimsical nature.	Nenkov and Scott [24]

(in the following structural equation model, three items are named CP1, CP2 and CP3 respectively. In particular, CP1: I think this lipstick brand is very cute; CP2: I think this lipstick brand is very adorable; CP3: I think this lipstick brand is very endearing) to measure the cuteness perception of the users [24]. Likert 5-Level Scale was also used, and the assignment method was the same as above.

4. Data Analysis.

4.1. **Descriptive statistical analysis.** The questionnaire survey used paper questionnaires and online questionnaires on the Questionnaire Star platform. The online survey was conducted in Chinese mainland, while the offline survey was mainly concentrated in Dalian of Liaoning Province. A total of 595 questionnaires were distributed online and offline, of which 400 questionnaires were valid, with an effective questionnaire rate of 67.23%. The results of questionnaire analysis show that the respondents are mainly female, and the ratio of male to female is about 1 : 8; the age mainly concentrates under 40 years old, accounting for 90%; the proportion of bachelor is high, reaching 45%; most of them earn less than CNY 4000 and the main occupation is students and company staffs. These indicators show that the respondents are mainly young and middle-aged, belonging to the lipstick product user group, with good representativeness.

TABLE 2. New measurement items of the influencing factors of cuteness perception

Typical description	Items
Packaging; Package material; Color; Texture; Feel; Shape	N18. The color of the lipstick package will affect how cute the lipstick is.
	N19. The material of the lipstick package will affect how cute the lipstick is.
	N20. The shape of the lipstick package will affect how cute the lipstick is.
Shell; Appearance; Color; Texture; Feel; Shape	N21. The color of the lipstick shell will affect how cute the lipstick is.
	N22. The material of the lipstick shell will affect how cute the lipstick is.
	N23. The shape of the lipstick shell will affect how cute the lipstick is.
Paste pattern; Paste texture; Texture; Feel; Shape	N24. The paste pattern of the lipstick will affect how cute the lipstick is.
	N25. The shape of the lipstick paste will affect how cute the lipstick is.
	N26. The taste of the lipstick paste will affect how cute the lipstick is.
	N27. The texture of the lipstick paste will affect how cute the lipstick is.
Spokesman, Anchor, Model	N28. The spokesman of the lipstick will affect how cute the lipstick is.
Price	N29. The price of the lipstick will affect how cute the lipstick is.

4.2. **Reliability and validity analysis.**

4.2.1. *Reliability analysis.* In empirical research, researchers generally use the value of Cronbach's α to verify the reliability of the questionnaire. Generally speaking, the reliability is considered as good if the value of Cronbach's α is greater than 0.7. In addition, in reliability analysis, CITC (corrected item-total correlation) is often used to measure the correlation between a certain item and other items. It means a high correlation when the value of CITC is greater than 0.4 [29]. Using the questionnaire data to analyze the reliability of the initial scale, the value of Cronbach's α is 0.903, which indicates that the reliability is good. Among these items, the CITC values of N1, N3, N5, N6, N13 and N29 are lower than 0.4 (item codes are shown in Table 1 and Table 2), which indicates that the six items have low correlation with other items, so they are deleted. For the same reason, N2, N4 and N28 are deleted in the next two reliability analysis processes. The rest items are recoded again, and the final results of reliability analysis are shown in Table 3.

As shown in Table 3, the value of Cronbach's α is 0.897, and the CITC values of remaining items are all greater than 0.4. According to the reliability standard proposed by Wu [29], the reliability of items is considered as good.

4.2.2. *Exploratory factor analysis.* Factor analysis can extract common factors among variables and replace complex data structure with simpler one [29]. Therefore, after the reliability analysis, exploratory factor analysis is performed on the remaining items. Among these items, each factor loading of Q10 is less than 0.5, so it is deleted. In addition, Q18 is deleted because its multiple factor loadings are greater than 0.5. Factor analysis is carried out again, and the results are shown in Table 4.

TABLE 3. Final reliability analysis results of the influencing factors of cuteness perception

Cronbach's α	**Items**	**CITC (corrected item-total correlation)**	**Cronbach's α after deleting this item**
0.897	Q1. This lipstick is designed with animal elements.	0.461	0.894
	Q2. The name of this lipstick is associated with animals.	0.498	0.893
	Q3. This lipstick has a whimsical design.	0.530	0.892
	Q4. This lipstick has a name of youth (for example, baby, and mini).	0.417	0.896
	Q5. When communicating with customers, the brand often uses reduplicative words (e.g., yaya, and heihei).	0.499	0.893
	Q6. When communicating with customers, the brand often uses onomatopoeia (e.g., poof).	0.472	0.894
	Q7. This brand makes me feel approachable, warm.	0.406	0.895
	Q8. This brand makes me feel naive, open.	0.470	0.894
	Q9. This brand makes me think that it is honest and lack of vigilance.	0.473	0.894
	Q10. This lipstick brand has whimsical nature.	0.545	0.892
	Q11. The color of the lipstick package will affect how cute the lipstick is.	0.581	0.891
	Q12. The material of the lipstick package will affect how cute the lipstick is.	0.570	0.891
	Q13. The shape of the lipstick package will affect how cute the lipstick is.	0.621	0.890
	Q14. The color of the lipstick shell will affect how cute the lipstick is.	0.584	0.891
	Q15. The material of the lipstick shell will affect how cute the lipstick is.	0.581	0.891
	Q16. The shape of the lipstick shell will affect how cute the lipstick is.	0.573	0.891
	Q17. The paste pattern of the lipstick will affect how cute the lipstick is.	0.578	0.891
	Q18. The shape of the lipstick paste will affect how cute the lipstick is.	0.607	0.890
	Q19. The taste of the lipstick paste will affect how cute the lipstick is.	0.534	0.892
	Q20. The texture of the lipstick paste will affect how cute the lipstick is.	0.472	0.894

TABLE 4. Exploratory factor analysis results of the influencing factors of cuteness perception

Research variable	**Items coding**	**Factor loading**		
		1	2	3
Baby elements and communication (BEC)	Q1	0.085	**0.697**	0.196
	Q2	0.080	**0.796**	0.131
	Q3	0.144	**0.732**	0.170
	Q4	0.118	**0.605**	0.121
	Q5	0.093	**0.784**	0.135
	Q6	0.047	**0.791**	0.140
Naive personality (NP)	Q7	0.060	0.225	**0.846**
	Q8	0.066	0.323	**0.822**
	Q9	0.153	0.234	**0.783**
Sensory experience (SE)	Q11	**0.691**	0.150	0.174
	Q12	**0.787**	0.103	0.018
	Q13	**0.846**	0.102	0.013
	Q14	**0.834**	0.069	−0.004
	Q15	**0.793**	0.091	0.030
	Q16	**0.843**	0.041	−0.009
	Q17	**0.724**	0.117	0.073
	Q19	**0.699**	0.042	0.132
	Q20	**0.597**	0.084	0.097
Initial eigenvalues		6.201	3.494	1.372
% of extraction variance		34.451	19.413	7.624
% of rotation variance		29.488	19.744	12.257
Number of items		9	6	3
Cronbach's α		0.911	0.849	0.832

As shown in Table 4, the cumulative variance explanation rate is 61.488%. Three factors (dimensions) with eigenvalues greater than 1 are extracted. In the items of each dimension, there is no cross-loading. The values of Cronbach's α of BEC, NP and SE are found to be 0.849, 0.832, 0.911, and the overall Cronbach's α value of the scale is 0.884, all of which are greater than 0.7. These results indicate that the influencing factors of cuteness perception should be divided into three dimensions: baby elements and communication, naive personality, sensory experience.

4.2.3. *Confirmatory factor analysis.* Confirmatory factor analysis (CFA) aims to discuss the correlation between variables, which is usually realized by structural equation modeling. In order to test whether the variables can be used for structural equation modeling analysis, the mean and standard deviation of the sub-indicators of the variables are calculated (see Table 5 in detail).

According to Table 5, it can be seen that the mean of all sub-indicators is between 2.65 and 3.68, indicating that the respondents tend to agree with items. The values of standard deviation are between 0.763 and 0.955, which are higher than the standard value of 0.5. Therefore, the research variables are suitable for structural equation modeling.

4.2.3.1. *The degree of fit between the data and the model.* LISREL 8.70 is used to construct the structural equation model for all research variables, and the fit indices of the model are obtained (see Figure 1 and Table 6). The results of confirmatory factor analysis show that factor loading values range from 0.77 to 0.96, which are all greater than the standard values of 0.6. According to the fitting standard of Hair et al. [30] and Hu and Bentler

TABLE 5. Mean and standard deviation of sub-indicators

Research variable	Sub-indicator	Including items	Mean	Standard deviation
BEC	BECa	Q1, Q2, Q3	2.65	0.936
	BECb	Q4, Q5, Q6	2.85	0.865
NP	NPa	Q7	3.51	0.955
	NPb	Q8, Q9	3.45	0.839
SE	SEa	Q11, Q12, Q13, Q14	3.67	0.810
	SEb	Q15, Q16, Q17, Q19, Q20	3.68	0.763

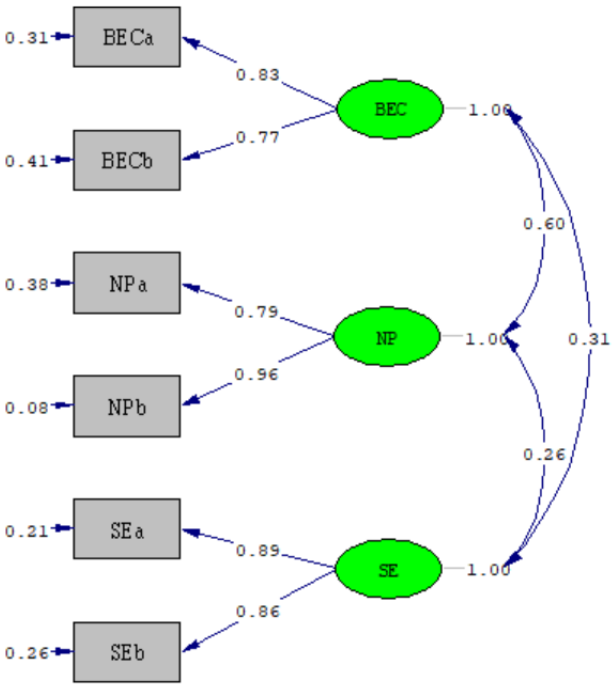

FIGURE 1. Confirmatory factor analysis results of research variables

TABLE 6. Model fit index of research variables' confirmatory factor analysis

Index	χ^2/df	GFI	IFI	CFI	NFI	RMSEA	SRMR	NNFI	RFI
Value	0.42	1.00	1.00	1.00	1.00	0.000	0.007	1.01	0.99
Standard	< 5	> 0.9	> 0.9	> 0.9	> 0.9	< 0.08	< 0.05	> 0.9	> 0.9

[31], all fit indices meet the standard values, indicating that the data and the model fit well.

4.2.3.2. *Convergent validity analysis.* Convergent validity is designed to measure the correlation between different sub-indicators which belong to the same variable. It is mainly tested by the two indicators: standardized factor loading and average variance extraction (AVE). The specific analysis results are shown in Table 7.

The results in Table 7 show that the standardized factor loading values of the sub-indicators are all between 0.77 and 0.96, which are greater than the standard value of 0.6. The AVE's value of each research variable is between 0.641 and 0.773, which is greater than 0.5. It is obvious that the convergent validity of the variables is good.

4.2.3.3. *Discriminant validity analysis.* Discriminant validity is designed to test the distinction between different research variables, which is judged by comparing the square

TABLE 7. Convergent validity analysis results

Research variable	Coding	Standardized factor loading	T-value	Composite reliability	AVE
BEC	BECa	0.83	16.17	0.781	0.641
	BECb	0.77	15.05		
NP	NPa	0.79	16.04	0.871	0.773
	NPb	0.96	19.79		
SE	SEa	0.89	13.17	0.867	0.766
	SEb	0.86	12.97		

root of AVE with the correlation coefficient between variables. When the square root of AVE is greater than the correlation coefficient between variables, discriminant validity of the variables is considered as good. In Table 8, the values on the diagonal are the square root of each AVE, and the others are the correlation coefficients. The square root of AVE of each research variable is greater than the correlation coefficient. Therefore, discriminant validity of the research variables is good.

TABLE 8. Discriminant validity analysis results

Research variable	BEC	NP	SE
BEC	0.801		
NP	0.600	0.879	
SE	0.310	0.260	0.875

4.3. **The structural equation modeling analysis.** In this step, the structural equation model is used to test whether the three dimensions of the influencing factors of cuteness perception, namely BEC, NP and SE, significantly affect cuteness perception (CP). In the initial model obtained, there is a path (BEC→CP) with standardized path coefficient of 0. Due to its T-value less than 1.96, the path is deleted. The final model of the influencing factors of cuteness perception is obtained, as shown in Figure 2.

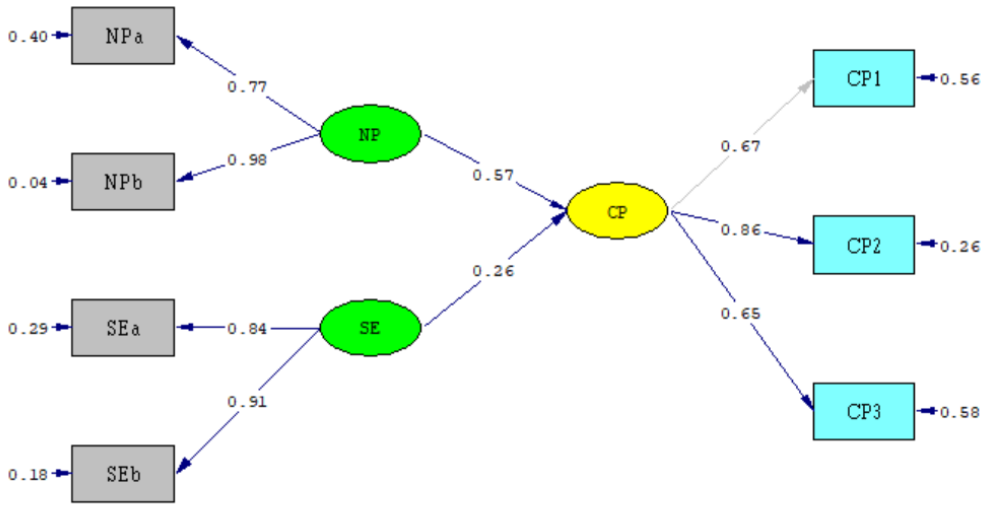

FIGURE 2. The final result of structural equation modeling analysis

According to the analysis results in Figure 2 and Table 9, GFI, IFI, CFI, NFI, NNFI and RFI are all greater than 0.9, and SRMR is less than 0.08, thus meeting the reference standards. χ^2/df is slightly higher than 5 and AGFI is slightly less than 0.9. Considering the large sample size for the research, the above values of χ^2/df and AGFI are also

TABLE 9. Model fit index of structural equation modeling analysis

Index	χ^2/df	GFI	AGFI	IFI	CFI	NFI	RMSEA	SRMR	NNFI	RFI
Value	5.65	0.96	0.89	0.97	0.97	0.96	0.108	0.054	0.93	0.92
Standard	< 5	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	< 0.08	< 0.08	> 0.9	> 0.9

acceptable. RMSEA is 0.108, which is very close to the value of 0.1. Steiger believed that RMSEA less than 0.1 indicates that the model has achieved a good degree of fit [32]; however, 0.1 is only the recommended value, and other indices are required to comprehensively determine the degree of model fit. When all other indices are comprehensively considered, the model is found to have a good degree of fit according to Hair et al. [30] and Hu and Bentler [31].

5. Conclusions.

5.1. **Research findings.** Based on the existing literature, this paper develops a final scale of the influencing factors of cuteness perception for lipstick products. The scale consists of 12 items and two dimensions (naive personality and sensory experience). Among them, naive personality includes three items, which refers to the brand personality that the brand needs to show to customers, including approachable, warm, naive, honest and so on; sensory experience refers to the experience and feeling of customers in the whole process of purchasing and using lipstick, including nine items, involving vision, touch and smell. In addition, according to the standardized path coefficients in the structural equation model, naive personality or sensory experience has a significant positive impact on lipstick products' cuteness perception, and the impact of naive personality (0.57) is greater than that of sensory experience (0.26).

5.2. **Management implications.** The above research results can not only reveal the important influencing factors of cuteness perception for lipstick products, but also offer some management implications. Specifically, when designing lipstick products, in order to enhance customers' cuteness perception, cosmetics enterprises should establish naive brand personality and improve sensory experience of customers. To begin with, cosmetics enterprises should establish approachable, warm, naive and other similar brand personality so that customers can feel cute and have a good impression on the brand, so as to promote the brand image of lipstick products and customers' purchase intention. What is more, in order to add customers' cuteness perception, cosmetics enterprises should improve customers' sensory experience from these aspects of vision, smell and touch of lipstick products. More specifically, they should improve customers' sensory experience from these aspects of lipstick products' outer packaging, shell, paste pattern, paste smell and paste touch, so as to make products gain the favor of customers, and achieve the purpose of increasing lipstick sales finally.

5.3. **Research limitations.** This paper takes the lipstick products as the research object. Considering that each industry has its own characteristics, the scale developed here may be limited to this specific industry (cosmetics industry). The potential applicability of the scale to other industries requires further study.

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