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Research on the Implicit Demand Factors of Mask Purchase in the Post-Pandemic Background: Evidence from China

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Abstract: *The consumption demand for masks has decreased against a post-pandemic backdrop, and the importance of consumers' functional desire for wearing masks has arisen as a multifaceted and nuanced differentiation phenomenon. Researchers both domestically and internationally focus on emotion recognition, trust perception, and attractiveness perception when masks are worn, but there is a vacuum in their examination of the demand-influencing elements prior to mask purchases. Two key demand drivers for consumers to purchase masks in the post-pandemic setting are collected in Study 1 using in-depth interviews and qualitative analytic software Nvivo coding: functional needs and emotional needs. Through the questionnaire survey used in Study 2, the data results not only confirmed the coding findings of Study 1 but also revealed variances in mask choice among various age groups and genders. For mask businesses to develop marketing strategies, change, and upgrade in the post-pandemic context, the study findings serve as strategic references.*

Keywords: *Post-pandemic; Mask consumption; Mask functional needs; Mask emotional needs; Social Anxiety*

1. Introduction

Late in 2019, COVID-19 swept the globe, having a significant impact on the growth of the real economy, particularly the retail sector. After being developed for several years in the context of the pandemic, masks are now a regular item in people's daily lives. The demand for masks underwent a substantial change in early 2023, following the peak of the first wave of COVID-19 infections in China. Mask firms then had to contend with weak market demand, strong market rivalry, and the pressing need for transformation and modernization. Although many nations have abolished the obligation to wear masks in public settings during the post-pandemic period, many customers still decide to wear masks when traveling. Customers bought masks in the early stages of the pandemic because they wanted to avoid getting COVID-19. However, there were numerous and minor differences in why people bought masks in the middle and late stages of the pandemic. First, it was discovered through real-life observation that most Asian faces are flat with a low nasal bridge. However, wearing a mask, such as a 3D mask, can not only change the contour of the lower face but also conceal the less attractive mouth and nose, which can help consumers who are self-conscious about their appearance. Second, wearing a mask can hide facial microexpressions, reducing the amount of emotional information that is revealed to others. This can help socially awkward people feel less anxious by partially isolating the information revealed by facial expressions[1]. Combining the two aforementioned arguments, it becomes clear that customers appear to opt to wear masks for reasons other than just avoiding COVID-19—possibly even for undiscovered underlying causes.

After reviewing and synthesizing the available literature, most domestic and international scholars' perspectives on masks concentrate on how to influence people's perceptions of emotion recognition, attractiveness, trust, etc. after wearing masks. However, few scholars investigate the factors influencing consumers' demand before purchasing masks from the perspective of consumer demand, despite the fact that these underappreciated factors are precisely the mask's determining factors. However, in the post-pandemic background, these overlooked aspects are the primary premise for market repositioning and production plan modification for mask firms. In light of this, it is extremely important to investigate the factors impacting consumer demand for masks in the post-pandemic scenario.

Two studies altogether are intended to be explored in this study through literature reviews, in-depth

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interviews, and questionnaire surveys. The text converted from the interview recordings was level by level coded in Study 1 through in-depth interviews, and it was shown that variables affecting customers' purchases of masks include both emotional needs and functional needs. Not only was the coding finding from Study 1 further verified in Study 2, but it was also discovered that various genders and ages had varying preferences for masks. The study's conclusions offer strategic recommendations and references for mask firms about the development of marketing strategies as well as market segmentation and positioning modification in the post-pandemic setting.

2. Literature Review

Numerous studies on the topic of masks have been undertaken by academics both domestically and internationally. These studies largely concentrate on how masks affect social distance, perceived trustworthiness, emotional recognition, and social anxiety. Each of them will be outlined below in order to more thoroughly and methodically classify the literature pertaining to the psychology of mask consumption and put forward the research questions.

The likelihood that someone will wear a mask rises dramatically with age; women are 1.5 times more likely to wear a mask than males, and those shopping in urban or suburban regions are around 4 times more likely to wear a mask than people shopping in rural areas[2]. According to Japanese researchers, black masks are less popular with the general public than white ones, and masks have a stronger enhancing impact on beauty for those with less beautiful faces[3][4]. While Patel (2020) and Kamatani (2021) noted that masks instead decreased facial attractiveness for those who were already highly attractive[5][3], Lau (2021), Parada-Fernández (2022), and other researchers have shown that wearing masks has an effect on enhancing facial attractiveness[6][7]. Another study on masks and facial attractiveness found that if the race of the people in the experimental material pictures was the same race as the experimental subjects (who were responsible for scoring the attractiveness of the pictures of people wearing masks), wearing masks increased attractiveness ratings for faces in general but decreased attractiveness ratings for pretty faces; if they were of different races, wearing masks increased attractiveness ratings for people in the experimental material pictures regardless of their own facial attractiveness[8]. In the post-pandemic age, people's perceptions of the mask have expanded beyond just its capacity to ward off COVID-19 and also include its potential use as a face grooming item, with those who find themselves to be less beautiful depending more on the mask and less on the other way around. The act of donning a mask has changed from being a self-protective precaution at the start of the pandemic to a technique for presenting oneself in the aftermath[9].

In addition to mask cover-up's impact on face attractiveness, there is some interference with the wearer's ability to recognize their own emotions. By hiding the alteration in the expression of the face underneath, the mask lessens the recognition of the wearer's facial emotions (surprise, happiness, disgust, sadness, etc.), but there is no discernible difference in the recognition of neutral emotions (expressionless face), anger, and fear[10][11][12][13[14]]. On the other hand, Ross (2022) and other researchers discovered experimentally that there was no longer a significant difference in the subjects' judgments of their emotions, except for happiness, with and without masks when the whole person appeared in the subjects' eyes rather than a partial (face only) picture[15]. In addition to having an impact on emotion perception, the sealability of the mask makes the speaking voice weaker and less distinct, which indirectly affects the listener's capacity to distinguish the voice[16][17][18]. So, do masks have any additional positive impacts on the person wearing them? Researchers like Cartaud (2020) and Luckman (2021) discovered that wearing a mask during a pandemic can increase people's perceptions of the wearer's trustworthiness and social closeness[19][20], and researchers like Ackermann (2021) discovered that wearing a mask can also do the same[21]. Additionally, wearing a mask is seen as a responsible civic activity due to the influence of societal norms[22][23]. Data presented by Klucarova (2022) showed that wearing a mask during a pandemic has a favorable impact on individuals who work in social media professionally; wearing a mask increases viewers' levels of trust and closeness with social media workers[23]. In the setting of the pandemic in China, Lu (2022) and colleagues discovered that masks as a moral symbol decreased the unethical conduct (red light running, parking offenses, etc.) of the wearers[24]. Besides, masks can make social contact easier for people who have high levels of social anxiety since they serve as a means of self-emotional concealment[22]. Based on this research, Perini (2022) discovered that wearing a mask made people more inclined to express themselves in social situations and made them talkativer than they were before[25].

In conclusion, most researchers have looked at how wearing masks affects people—for example, emotion recognition, attractiveness perception, and trust perception—but few have considered the

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psychological activities people engage in prior to purchasing masks, that is, the utility values that mask consumers can obtain by donning masks from the perspective of economic man. Due to the absence of these research viewpoints, the majority of domestic and international research on masks is empirical from a social psychology perspective, with essentially no qualitative studies of the drivers of mask consumer demand from a marketing perspective. But these ignored factors are quite significant for the marketing strategies of many mask businesses. It seems reasonable that an exploratory study on the demand for masks is still in its infancy since masks have just recently reached the research horizon of researchers due to the current pandemic. To sum up, the purpose of this paper is to explore the factors influencing consumers' demand for masks in the post-pandemic context from the perspective of consumer demand in order to promote the upgrading of mask enterprises' marketing strategies and speed up economic circulation.

3. Theoretical Background

3.1 Consumerism Culture

Consumer behavior was divided into three basic stages by Philip Kotler: the "quantity consumption stage," during which people chase after goods they can afford to buy and consume; and the "quality consumption stage," during which people yearn for goods of greater quality. The third stage is referred to as the "emotional consumption stage," when customers consider a product's symbolic value, identification value, and other emotional experiences together with its quality and cost[26]. With the rise of post-modern consumerism, symbolic consumption has grown widespread, and the major aims of consumption have changed to customers' psychological happiness, individuality, and spiritual pleasure. As a result, the "emotional value" of things has increased to a new level. As a result, Phillip Kotler classified the third type of consumption as fundamentally emotional, meaning that people want to feel good about themselves by engaging in consumption.

In the early stages of the pandemic, the first group of consumers to enter our field of vision was a group of individuals donning sanitary masks. However, individuals donning the masks had an adverse effect on both the emotional recognition of the face as well as the overall appearance of visual homogeneity. The difference between the before and after, however, emphasizes the conflict between customers' customized desires for their own image and visual homogeneity. Consumer needs, however, are diverse. Some mask businesses understand this issue and conduct customized, diverse manufacturing with a national fashionable wind, with the same masks of internet celebrities making an appearance on the market[27]. Through a variety of masks, consumers may express their identities and personal fashion preferences in order to shape their own assets[28][29]. People are no longer only content with the medical protection function of masks in the dual context of the post-pandemic coupled with the prevalence of consumerist culture, but instead pursue emotional value beyond the functional value, an additional role beyond the core function of the product, and symbolic, personalized, and diversified consumption. In the United States during the pandemic, masks created by luxury brands were even sold for $100[30]. Under consumer culture, masks rapidly evolved from being a medical item to a symbolic emblem, and a variety of multi-material masks gained popularity on the market[28]. Masks have also been incorporated into branded items by several well-known firms, like Asos, Adidas, New Balance, et al., and they are sometimes sold in bundles with their original products. Consumers may choose to purchase masks separately or in conjunction with their original products.

3.2 Social Anxiety

The term "social anxiety" (SA) is used to describe the emotional and behavioral responses that a person has while interacting with others, including discomfort, fear, uneasiness, concern, and avoidance[31]. Social anxiety is a conditionally learned emotional response that people acquire through cognitive covariance in information reception, short-term memory, and cognitive review. If it is not corrected or improved, social anxiety may worsen and continue to affect people's personality development, academic success, career development, physical and mental health, and more. Social anxiety disorder, or SAD for short, is an extreme situational concern in which people worry that others will examine them or that they could behave shamefully in social and public performance circumstances[32]. As a result, people who suffer from social anxiety usually lessen their emotions of apprehension, worry, and discomfort by refraining from unsafe actions like going into uncomfortable social settings[33]. The main symptoms of social anxiety disorder, which primarily include anxiety over appearance, blushing terror, sight terror, expression terror, stuttering terror, and exhibitionist terror[34],

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are also common chronic disorders that impair social functioning and have a high prevalence.

We may understand that social anxiety can be exacerbated by ugly faces, psychological insight by others, public socializing, and insight by expressions by carefully examining the description of social anxiety given above and the forms of social anxiety disorder. Is there a relationship between this and the function of masks discussed earlier? This study contends that there is a significant correlation between the wearer's level of social anxiety and the mask's masking and modifying effects, and that the former can affect the latter. First, wearing a 3D mask not only modifies the lower facial contour to make it more three-dimensional but also covers the less attractive mouth and nose to improve the attractiveness of the facial image, which can lessen ugly terror. Second, wearing sanitary masks also covers the lower micro-expressions and exposes less emotional information about oneself to the outside world, which can lessen expression terror, being exposed to others' emotions, and expression terror. Because of the uniform mask, the wearer's entire appearance will catch the viewer's attention instead of just their face.

4. Research Design and Data Analysis

Few researchers have studied the reasons why people buy masks; thus, for mask businesses to maximize their marketing plans in the post-pandemic era, a thorough grasp of these reasons is essential. Therefore, this paper designs two studies for preliminary exploration. Study 1 involved conducting in-depth interviews with a sample size of 13, and the coding revealed that emotional needs are just as important as basic functional needs in influencing consumer purchases of masks. Study 2 involved conducting a questionnaire survey with a valid sample size of 307 participants, and the data results not only confirmed the coding findings of Study 1 but also revealed differences in mask preferences by gender and age.

4.1 Study 1

In-depth interviews were conducted in this study's qualitative research to help researchers better understand why customers buy masks. The interview materials were derived from text data that was converted from the recordings of in-depth interviews and processed and analyzed using Nvivo11 software.

4.1.1 Interview design and sample selection

"What aspects do you take into consideration when buying a mask?" is one of the questions the interviewer posed to the respondent during the interview. With only a brief interview plan and a step-by-step approach, we employed a non-procedural, structured interview method for this study. We determined the order of the questions based on the actual interview circumstances. 13 participants in the study—from various vocational fields—were each paid 40 RMB and had an average age of 25. The interview lasted between one and two hours, with a break in the middle. A total of 100,000 words of interview transcripts were eventually created by arranging all the interview topics and recordings.

4.1.2 Coding procedure

Open the Nvivo11 program, make a new file, import the interview text, remove any incorrect stop words using a word frequency query, and first gain a general grasp of the elements influencing mask demand. Once the sub-nodes had previously been constructed and the interview texts had been categorized into the appropriate nodes, they were then numbered one by one by coding, integrating the nodes to which they corresponded. A free node will be used to indicate a new conceptual category if its categorization cannot be established. After the first coding is finished, the program will restructure and combine various nodes. To get the optimum coding impact throughout this process, the nodes will be repeatedly improved, and the node names may, if required, be changed in accordance with the content of each node.

4.1.3 Coding example

Open coding was used to conceptualize and classify the original interview material. In the process, the concepts extracted from the interview transcripts are rigorously dissected, regrouped, and given new concepts and categories. In order to understand the original interview data, open coding entails word-by-word and sentence-by-sentence analysis. By connecting the links between various categories in order to create more generalized categories, an axial coding strategy and a cluster analysis method were utilized to assess the segmented contents of the open coding. Eight initial categories, two sub-categories, and one primary category were produced after the original categories were sorted according to their interrelationships and logical order. "Factors influencing the purchase demand of masks" is the primary

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category; the sub-categories are "functional needs" and "emotional needs"; the initial categories are "medical defense, anti-fog and dust, keeping warm and moisturized, food and beverage hygiene" under functional needs and "lessening social anxiety, protecting facial privacy, shaping unique personalities, and improving facial attractiveness" under emotional needs. The comprehensive coding structure is displayed below in Table 1.

Table 1: Coding structure of factors influencing mask demand

Primary category	Sub-category	Initial category	Reference node number	Examples of coding material
Influencing factors of mask purchase demand	**Mask functional needs**	Medical defense	32	"A mask's medical defense is, of course, its most fundamental function, and that's why I bought it."
		Food and beverage hygiene	2	"In the catering business, cooks converse with one another while preparing food, wearing a mask can prevent spit from getting into the food."
		Anti-fog and dust	7	"I only occasionally wear a mask when I ride, for protection from dust or smog."
		Keep warm and moisturize	2	"In my opinion, the mask also serves the purpose of keeping you warm. For example, if you wear one while washing your car in the winter, the wind will not blow in, and since the mouth will also be exhaling, there will be water vapor, which is equivalent to the moisturizing function of the mask."
	Mask emotional needs	Protecting facial privacy	26	"Some celebs have been seen leaving their residence wearing masks. They may not want to be photographed by others because they wish to safeguard their privacy. They presumably use masks to hide their identities and obscure their faces, like some internet celebrities who upload videos online."
		Lessening social anxiety	11	"After wearing the mask, I do feel like I have more confidence and a lot more social contact with others. In the street, for instance, you are free to act however you choose since no one knows who you are. I am not afraid to dance and sing in public if I am wearing a mask."
		Improving facial attractiveness	47	"I think my eyes look better than the rest of my body, and if only my eyes are exposed, I would think I look better with a mask on than without it."
		Shaping unique personalities	31	Q:" What do you suppose the wearers of these black masks are doing?" A: " Keep cool and enigmatic." "Girls should be the only ones to wear the pink pattern; I think it will make them look more adorable."

(Source: Nvivo 11 software analysis compilation)

Comparing the number of reference nodes for each initial category under the functional and emotional needs in the preceding table, there are only 32 nodes for "medical defense", and 47 nodes for "improving facial attractiveness". "Shaping unique personalities" and "protecting facial privacy" are also close to the number of nodes for "medical defense". This demonstrates that, in the post-pandemic context, the reasons driving customers to buy masks are no longer restricted to the primary function of the product itself but are also impacted by the supplementary function of the mask.

4.1.4 Reliability and validity test

Two researchers separately encoded using the Nvivo11 program to confirm the coding's reliability

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and then compared the data to determine the percentage of consistency. In the end, 96.42% of the main coder's and secondary coder's codes were consistent, demonstrating strong coding reliability. Second, the internal reliability test needs to be run in order to confirm the main coder's internal consistency. One month after the first encoding is complete, the main coder needs to load the interview materials again into the Nvivo11 program, and only then should the interview document be recoded. In the end, it was determined that the coding was appropriate because the main coder's coding consistency percentage was 98.68%, higher than 96.64%.

4.2 Study 2

4.2.1 Questionnaire design

In order to explore potential emotional needs that go beyond the functional requirements of masks, as well as to further validate the coding findings of Study 1, which are more crucial for mask companies to upgrade their marketing strategies in the post-pandemic context. The Questionnaire Online platform was used to create Study 2 and carry out the questionnaire research for this work. A total of 330 questionnaires were received, and a 93% efficiency rate was achieved by excluding 23 invalid questions from the remaining 307 valid surveys. Age and gender were the subjects of the first two questions, while the third one asked about the respondents' preferences for various mask styles (total of 6; select 3). The remaining four questions are adaptations of the four dimensions of an emotional mask's needs. For instance, response options to question 8, "Do you agree that wearing a mask can lessen social anxiety for yourself or others in your daily life?" were graded on a seven-point Likert scale. Since "social anxiety" is a psychiatric phrase, we didn't want to get findings that weren't accurate because the respondents didn't understand what it meant. The questionnaire in this study had the question "Do you know what social anxiety means?" to which the options were "yes" and "no." Nine out of the 330 respondents who responded "no" were omitted from the analysis because of the findings.

4.2.2 Factor analysis

Through exploratory factor analysis, it was discovered that the four test items adapted from emotional needs have factor loadings that are all greater than 0.5 (minimum 0.666), only one principal component can be extracted through principal component analysis, and the Cronbach coefficient is always lower than the standardized coefficient value after the item is removed, and = 0.684. The p values for the Hotelling t-square test, KMO test, and Bartlett spherical test were all less than 0.001. In light of this, the following stage of data analysis may be completed.

4.2.3 Data analysis

The statistics for the sample description, the four dimensions of emotional needs for masks, and the correlation analysis for each dimension are provided in Tables 2- 4.

Table 2: Statistics for the sample description

Demographic characteristics	Classification Criteria	N=307	Proportion	Mask preference types	n	Proportion
Gender	Male	134	43.65%	Sanitary masks	182	59.28%
	Female	173	56.35%	3D white masks	179	58.31%
Age	<18	2	0.65%	3D black masks	86	28.01%
	18-25	87	28.34%	Masks with patterns	51	16.61%
	25-35	173	56.35%	Gradient color masks	116	37.79%
	＞35	45	14.66%	Chinese Style masks	126	41.04%

As noted in Table 2 above, the effective sample size for this survey is N = 307 individuals, 84.69% of whom are between the ages of 18 and 35, and the proportion of female respondents is marginally higher than that of male respondents. Consumers choose 3D white masks and sanitary masks the most, with Chinese-style masks coming in third, according to the number of preferred types of masks. Masks with patterns have the lowest preference ratio.

Male choice was higher than female preference for sanitary masks (F = 0.692, P = 0.406), 3D black masks (F = 3.677, P = 0.056), and Chinese-style masks (F = 4.472, P = 0.035), with significant variations in Chinese-style mask preferences. Female choice was higher than male preference for 3D white masks (F = 0.246, P = 0.620), masks with patterns (F = 10.338, P = 0.001), and gradient color masks (F = 6.460, P = 0.012), with significant variations in masks with patterns and gradient color mask preferences.

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Consumers between the ages of 18 and 25 like gradient color masks (F = 0.583, P = 0.627) and 3D white masks (F = 1.109, P = 0.346), and customers between the ages of 25 and 35 had a somewhat larger preference for sanitary masks than consumers in other age groups (F = 1.807, P = 0.146). Consumers over 35 had somewhat larger preferences for 3D black masks (F = 1.002, P = 0.392) and Chinese-style masks (F = 2.162, P = 0.093) than consumers in other age groups. Additionally, there was a significant correlation between respondents' ages and their level of affinity for Chinese-style masks.

Table 3: Four dimensions of emotional needs for masks

Measured Variables	Dimensions	N	Min.	Max.	Mean	SD.
Mask emotional needs	Protecting facial privacy	307	2	7	5.76	1.02
	Improving facial attractiveness	307	1	7	4.94	1.40
	Shaping unique personalities	307	1	7	5.43	1.18
	Lessening social anxiety	307	1	7	5.64	1.12

Except for "improving facial attractiveness," which is slightly less than 5, the other three emotional requirements of masks are all substantially more than 5, as can be seen from Table 3 above. According to Likert's seven-point scale (4 implies neutrality), "improving facial attractiveness" is the only dimension that falls below 5. So, the respondents would agree with the four dimensions of the mask, according to the statistics. Previous research has demonstrated that wearing a mask will lessen a person's attractiveness, especially for those who are already very attractive[5][35]. As a result, the data results further support the findings of earlier studies.

Table 4: Correlation analysis for each dimension

Pearson Correlation				
	Protecting facial privacy	Improving facial attractiveness	Shaping unique personalities	Lessening social anxiety
Protecting facial privacy	1			
Improving facial attractiveness	.317**	1		
Shaping unique personalities	.358**	.319**	1	
Lessening social anxiety	.460**	.324**	.328**	1

** is significant (two-tailed) at the 0.01 level.

As can be seen from the above table 4, there is some correlation between all dimensions of emotional needs. The correlation between "lessening social anxiety" and "protecting facial privacy" is at its highest at 0.460, followed by "shaping unique personalities" and "improving facial attractiveness," which are each at 0.328 and 0.324. This further demonstrates how the concealing and modifying of masks can safeguard users' facial privacy, enhance facial attractiveness, and somewhat shape unique personalities so as to lessen the anxiety over appearance, blushing terror, sight terror, expression terror, exhibitionist terror, and so forth, and thereby play a role in lessening social anxiety.

5. General discussions

In this work, two studies in total are designed. Study 1 found that, in the post-pandemic era and the prevalence of consumer culture, the factors influencing consumers' purchase of masks are not only the basic functional needs but also the implicit emotional needs (improving facial attractiveness, lessening social anxiety, shaping unique personalities, and protecting facial privacy). Study 2 used online surveys to examine the emotional needs and preferences of customers for various mask styles across a range of genders and ages. It not only strengthened the coding's conclusion that masks may satisfy customers' emotional demands, but it also uncovered differences between mask preferences among different age groups and genders. Male choice was higher than female preference for sanitary masks, 3D black masks, and Chinese-style masks, with significant variations in Chinese-style mask preferences. Female choice

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was higher than male preference for 3D white masks, masks with patterns, and gradient color masks, with significant variations in masks with patterns and gradient color mask preferences. Consumers between the ages of 18 and 25 like gradient color masks and 3D white masks. Customers between the ages of 25 and 35 had a somewhat larger preference for sanitary masks than consumers in other age groups. Consumers over 35 had somewhat larger preferences for 3D black masks and Chinese-style masks than consumers in other age groups. Besides, there was a significant positive correlation between respondents' ages and their level of affinity for Chinese-style masks.

5.1 Theoretical implications

This study investigates the consumption psychology of masks in the post-pandemic setting from the viewpoint of distinctive consumption demand. Research topics were derived using data from earlier studies and observations of events in daily life. The post-pandemic background elements influencing consumer demand for masks were uncovered through in-depth interviews, surveys, and other methodologies. The research shows that factors influencing consumers' demand for mask purchases are not only functional needs but emotional needs as well, and that they to some extent support the development of mask consumption psychology. This paper also ingeniously selects consumers' physical features and level of social anxiety, which have received less attention.

5.2 Managerial implications

Through this paper, both mask companies and non-mask enterprises may consider the product of masks from a new perspective in order to give the best answers for new marketing strategies and market segmentation. Traditional mask businesses can work to build brand associations with other clothing companies, develop and introduce masks as new clothing items, and construct product strategies in accordance with the personalities, values, and target markets of the brand partners. Advertising for marketing and promotion purposes ought to emphasize masks' additional benefits in addition to their fundamental functionality. To highlight the gorgeous image underneath wonderfully designed masks and pique customers' desire to buy, short video content marketing may be utilized to recruit personnel with strong face attractiveness (particularly eyes) to make short video assessment movies of exclusive items of businesses. Mask companies can only command a premium and succeed in their goal of growing earnings in the post-pandemic environment by convincing customers that the masks sold are not only attractive but also useful and better fit in with the trend of current fashion. According to the preferences of different ages and genders for mask styles, the appropriate target market should be chosen, and focused product design and advertising should be implemented. Both the target market and the product positioning need to be clarified.

5.3 Limitations and future research

Although this paper's perspective selection is original given the paucity of domestic and international research on the psychological impact of demand as a motivation for mask purchase, there are still numerous weaknesses in the research process as a result of limited capacity: First, there might not be more than these four components to the emotional needs for masks, and the same is true of the functional needs. Additionally, the coding of interview transcripts maybe not sufficiently precise owing to a lack of experience. Second, the second study's findings are not accurate and trustworthy strictly because it is a questionnaire survey. Third, masks may have the reverse impact on social anxiety among those who have difficulty speaking and listening, although this situation is not covered in this research.

The psychology of Chinese people's mask consumption under collectivism is discussed in this study. On the basis of this, later researchers can do more research to determine if the study's findings apply to consumers in many nations with the same social culture (such as Japan's collectivism) or a different social culture (such as America's individualism). As an exploratory study, this paper's research approach could be constrained by the questions chosen. On this foundation, future research may improve and innovate, examining the effects of the priming effect of mask wearing on consumption behavior and the association between masks and social anxiety using more rigorous experimental methodologies. The findings of this study constitute a significant advancement for masks, given their role in disease prevention. It is still to be seen how it will impact mask design in the future and whether it will alter people's daily travel habits once the pandemic is over.

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Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors without undue reservation.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Ethics statement

The studies involving human participants were reviewed and approved by the Ethical Review Board of WUYI University. The participants also provided their written informed consent to participate in this study.

Author contributions

Yuan-Fang Zhu and Yi REN is in charge of developing the research framework, collecting the data, analyzing the data, and writing the paper. Liu HE was in charge of improving the research framework, paper revision and optimization, data proofreading, etc. Data collection and analysis were aided by Jun-Tao LI.

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