

Research Article

New Hotspot of Pet Economy: Study of Consumers' Purchase Intent for Pet Toys in China

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With the improvement of people's consumption levels and the increasing demand for emotional companionship, the status of pets in families has risen significantly. Some pet - owners affectionately call their pets "fur - kids", which reflects the care and attention they give to their pets. According to the China Pet Industry White Paper 2023 - 2024, the number of pet dogs and pet cats in China reached 51.75 million and 69.8 million respectively in 2023. Behind these huge numbers lies a pet consumption market with great potential, and pet toys, as an important part of the pet supplies market, have seen a growing consumption market year by year.

This study aims to explore and analyze consumers' consumption intentions for pet toys. It mainly collects and analyzes multi - dimensional data such as consumers' basic information, performance expectations, effort expectancy, facilitating conditions, consumption habits, and security through the method of distributing questionnaires. The study will also explore the impact of different age, gender, education, occupation and other social demographic characteristics on consumption intentions, so as to reveal the consumption trends and potential opportunities in the pet toy consumption market.

This paper deeply analyzes various factors affecting consumers' consumption intentions for pet toys and puts forward many targeted improvement suggestions, hoping to provide some new inspiration for related enterprises, enabling them to better meet consumers' needs and jointly promote the healthy development of the pet consumption market.

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1. Introduction

Globally, pets have become an indispensable part of many households. With the continuous improvement in living standards, increased disposable income, a rise in the aging population, and the growing need for emotional companionship, the number of people keeping pets has been on the rise. Since pets can have a positive impact on human emotions^[1], emotional needs have become one of the primary factors stimulating pet purchases. Most people experience stress in their daily lives, and Nesse et al. have mentioned that life stress can increase the incidence of depression^[2]. To alleviate this stress, people have tried various methods, with pet ownership becoming the preferred choice for stress relief. Bao has noted that keeping pets can enhance people's happiness^[3], thus indicating significant growth potential in the pet market. According to the American Pet Products Association (APPA), spending in the U.S. pet industry has been continuously increasing in recent years, with pet-owning households willing to invest heavily in the health and happiness of their pets. In China, a similar trend is observed. Miller analyzed the remarkable rise of China's pet industry^[4], and others have mentioned that pet ownership can increase consumer spending^[5]. Additionally, according to the "China Pet Industry White Paper," the market size for urban pet dogs and cats has been reaching new highs, with pet owners spanning all age groups, particularly dominated by young people. This widespread adoption of pet ownership has laid a solid consumer foundation for the pet toy market. In the past, pet owners were mostly concerned with the basic needs of their pets, such as food and shelter. However, with the shift in consumer attitudes, pet owners now place greater emphasis on their pets' quality of life, mental health, and emotional needs. Pet toys are no longer seen as optional accessories but as essential items that promote physical exercise, intellectual development, and anxiety relief for pets. The booming pet toy market has attracted a large number of participants, including traditional toy manufacturers entering the market, pet product companies, and cross-industry entrants from non-toy sectors. The market offers a wide variety of pet toys, ranging from simple plush toys and rubber balls to high-tech interactive toys and automatic feeding devices. The rapid development of technology has also provided endless possibilities for innovation in pet toys. These technological innovations not only enrich the product forms of pet toys but also have a profound impact on the development direction of the entire industry.

Therefore, this study aims to explore consumers' purchasing intentions for pet toys, analyze various factors influencing these intentions, and propose corresponding recommendations and strategies to promote the healthy and long-term development of the pet toy industry.

2. Current situation

In recent years, with the remarkable improvement of Chinese residents' living standards, the number of pet - owning families has continued to rise, and the pet product and service industry has rapidly emerged^[6]. This has injected strong impetus into the pet toy market. The "China Pet Industry White Paper" also shows that the market scale of pet consumption in urban and rural areas across the country has exceeded 100 billion yuan and has maintained a two - digit growth. Among them, pet toys, as a key category for improving the quality of pets' lives and enhancing the interaction between humans and pets, have steadily expanded their market share.

In terms of sales channels, online e - commerce platforms dominate. Taobao, Douyin, JD.com, etc. have gathered a large number of brands and products, and the convenient shopping mode is in line with the consumption habits of the young group; offline pet stores and supermarket counters also attract immediate consumption demand with their experience advantages, especially in first - and second - tier cities where the layout is dense. Among all consumer groups, the post - 90s and post - 00s young generations have become the main force in pet toy consumption. This group regards pets as a member of their own family, so they pursue high - quality and personalized pet toys. Among the numerous pet toys, functional, social and interactive toys are more popular among pet owners. This is a kind of toy that allows owners to communicate with pets. While improving the survival quality of pets, it also enhances the participation of pet owners, effectively relieves the loneliness and anxiety of pets, further enhances the affection between pets and owners, and enables owners to better understand their pets^[7]. And for functional and social pet toys, when playing with other pet owners, interesting pet toys can not only enhance the affection between people but also the affection between pets.

The market competition is fierce, and Chinese brands are booming. There are both brands that focus on cost - effectiveness and attract the public with a variety of styles and fast updates, and brands that position themselves at the high - end and cooperate with international designers to create high - quality products. No matter what kind of brand it is, their ultimate goal is to sell products, which requires them to clearly understand consumer needs and design more healthy products that satisfy consumers.

The pet industry in developed countries in Europe and America is highly mature, and the market scale of pet toys is huge and stable. In developed countries such as the United States in Europe and America, especially in the United States, the pet ownership rate exceeds 60%^[8], and the average annual pet consumption per family is considerable. Pet toys account for a significant proportion of pet product

expenditures. The sales channels of pet toys are diverse and coordinated. In addition to the e-commerce giant Amazon, professional pet retail chains have deeply rooted in the community with professional services and in-depth category coverage; large supermarkets have opened up pet special areas, forming one-stop shopping convenience with their own brands.

In the research of Mahmoud and others, it is mentioned that environmental protection awareness has a positive and significant impact on consumers' product purchase decisions^[9], so biodegradable and natural-material toys are more in line with the market's pursuit of sustainable development. In addition to being safe, this material also has the characteristics of bite-resistance and irregular rebound. The bite-resistance can help pets exercise their jaw muscles, and the irregular rebound can bring pets a new experience every time they play with the toy. In addition to environmental protection, pet toys should also have the function of helping pets' correct bad behaviors. The international pet toy market competition is also fierce. In addition to the original pet toy enterprises, many cross-border enterprises have entered the industry. The entry of "outsiders" not only brings new possibilities for the development of pet toys, but also reminds in-circle enterprises that if they want to be more competitive, they need to develop more distinctive products.

3. Related Theories

3.1. Consumer Behavior Theory

Consumer behavior theory encompasses various models. Among them, the Engel-Kollat-Blackwell model (EKB model) is relatively classical. It emphasizes that consumer decision-making is a complex process, involving multiple stages such as problem recognition, information search, evaluation and selection, purchase decision, and post-purchase behavior^[10].

When pet owners find that their pets show anxiety, damage furniture, or other behaviors when left alone at home, they will realize that they can solve these problems by purchasing pet toys and start to pay attention to the pet-toy market. Owners will collect information through various channels, including but not limited to online e-commerce platforms, professional pet forums, and introductions by offline pet-store clerks, to understand the brands, functions, and prices of different pet toys. Owners will compare various toys according to the collected information and screen out their favorite products after weighing the pros and cons. After purchasing the products, owners will observe the reactions of their pets to the toys. If the pets like the toys, the owners will be happy and may purchase other products of the

same brand; if the pets don't like them, the owners may return the products and then provide negative feedback on the products, which will further affect the purchase decisions of other consumers.

3.2. Product Life - Cycle Theory

The term "life - cycle" has been widely present in scientific and popular sources. In Sardak's interpretation of the life - cycle, the product life - cycle is systematically analyzed, and stages such as product introduction, sales growth, maturity, market saturation, and product decline are introduced^[11]. The market demand, competition situation and marketing strategies in different stages are significantly different.

When pet toys are first introduced to the market, consumers' awareness is low, and only a few pet - loving pioneers who pursue novelty are willing to try to buy them. At this time, enterprises need to invest a large amount of funds in research and development and production, and the product cost is high, so the price is also relatively high. The focus of market promotion is on introducing the functions and usage methods of products to consumers. As products are gradually accepted by the market, sales begin to grow rapidly. More consumers see the advantages of pet toys, and competitors begin to spot business opportunities and launch similar products one after another. At this time, enterprises need to expand production scale to reduce costs on the one hand and optimize product design according to consumer feedback to improve functions, expand sales channels, strengthen brand promotion, and consolidate market position on the other hand. When the market approaches saturation, consumers are more sensitive to product functions and prices, and enterprises need to adopt differentiated competition strategies. With the appearance of more intelligent pet toys, some traditional pet toys are gradually eliminated by the market. At this time, enterprises should reduce the production of traditional toys, timely introduce new products, and start a new product life - cycle.

3.3. UTAUT Theory

The Unified Theory of Acceptance and Use of Technology (UTAUT) model was proposed by Venkatesh^[12] and is one of the main theoretical frameworks for studying users' acceptance and utilization of new technologies^[13]. The UTAUT model gradually showed deficiencies in the new consumer environment, so three new constructs, namely hedonic motivation, price - value, and habit, were introduced to form the new UTAUT2 model. Compared with UTAUT, the UTAUT2 model can explain about 74% of the variance in consumers' behavioral intentions and about 52% of the variance in

consumers' use of focal technologies, demonstrating its strong analytical and predictive abilities^[14]. Therefore, this study selects the UTAUT2 model to conduct research on consumers' consumption intentions for pet toys.

In pet - toy advertisements, presenting warm interactions between pets and their owners and the cheerful scenes when using the toys can trigger an emotional resonance among pet owners and enhance their favorability towards the advertisements. Advertisements that provide detailed information about the material safety and functional features of pet toys can offer valuable information to consumers. When consumers have a positive attitude towards pet - toy advertisements, they are more likely to give positive evaluations of the products. This positive product attitude will significantly increase consumers' purchase intentions.

4. Research Design

4.1. Research Model

Based on the classification of consumers' different consumption demands, and on the basis of analyzing and summarizing questionnaires, combined with literature references, this study explores the factors that influence the consumption intentions of consumers of different ages, educational backgrounds, and occupations regarding pet toys. Through empirical research, this paper incorporates conceptual factors such as performance expectations, effort expectancy, facilitating conditions, consumption habits, and security to form research hypotheses. These hypotheses are then verified to determine whether the various factors influencing consumers' consumption intentions for pet toys are valid.

4.2. Research Hypotheses

4.2.1. The Influence of Performance Expectations on Consumption Intentions

With the booming development of the pet economy, the pet - toy market is expanding day by day. When choosing pet toys, pet owners are influenced by various factors, among which performance expectations are a key factor. Performance expectations refer to the expected effects that consumers anticipate from using a product. When using pet toys, if pet owners can improve the quality of their pets' entertainment activities, enhance interaction with their pets, and significantly boost their pets' intelligence, it will strengthen consumers' willingness to consume.

Combined with the impact of performance expectations on consumption intentions, the following hypothesis is proposed:

- H1: Performance expectations have a significant positive impact on consumption intentions.

4.2.2. The Influence of Effort Expectancy on Consumption Intentions

In the pet - consumption market, the sales of pet toys are influenced not only by the characteristics of the products themselves but also by consumers' psychological factors. Effort expectations refer to the amount of effort consumers need to put in when using a certain product. For pet toys, if pet owners can easily operate various types of pet toys and obtain psychological pleasure from it, this will strengthen their purchase intentions.

Combined with the impact of effort expectancy on consumption intentions, the following hypothesis is proposed.

- H2: Effort expectancy has a significant positive impact on consumption intentions.

4.2.3. The Influence of Facilitating Conditions on Consumption Intentions

With the improvement of people's living standards, the status of pets in families is becoming increasingly important, and the pet - toy market is booming accordingly. These convenience conditions cover many aspects, such as purchase channels, payment methods, product use, and after - sales service, all of which affect consumers' consumption intentions from different angles. Whether it is the purchase channel, payment method, product use, or after - sales service, the convenience of each link can stimulate consumers' purchasing desire. Pet - toy manufacturers and sellers should attach great importance to these convenience conditions, continuously optimize and improve related services to attract more consumers to buy pet toys, and further promote the prosperous development of the pet - toy market.

Combined with the impact of facilitating conditions on consumption intentions, the following hypothesis is proposed:

- H3: Facilitating conditions have a significant positive impact on consumption intentions.

4.2.4. The Influence of Consumption Habits on Consumption Intentions

Consumption habits reflect the long - term formed purchase behavior patterns and psychological preferences of consumers, which largely determine consumers' selection tendencies and purchase intentions for pet toys. Pet - toy manufacturers and sellers need to deeply understand consumers' consumption habits and formulate corresponding marketing strategies for consumers with different consumption frequencies, brand preferences, and price sensitivities. For consumers with high consumption frequencies, new products can be continuously innovated to attract them; for consumers with brand preferences, attention should be paid to shaping and maintaining the brand image; for price - sensitive consumers, cost - effective products and attractive promotional activities can be provided to promote consumption. Only in this way can they win the favor of consumers in the highly competitive pet - toy market, achieve market - share expansion and business - profit growth.

Combined with the impact of consumption habits on consumption intentions, the following hypothesis is proposed:

- H4: Consumption habits have a significant positive impact on consumption intentions.

4.2.5. The Influence of Security on Consumption Intentions

In the pet - products market, the consumption of pet toys is affected by various factors. Among them, consumers' security of pet toys is a key but often overlooked factor. Security refers to the potential threats that consumers subjectively believe pet toys may pose to the health and safety of pets. This perception will significantly affect consumers' intentions to purchase pet toys. Manufacturers and sellers need to fully recognize this and take measures from many aspects, such as product design, material selection, quality control, and marketing communication, to reduce consumers' perceived hazards, thereby increasing consumers' purchase intentions and promoting the healthy development of the pet - toy market. At the same time, consumers themselves should also improve their understanding of pet - toy safety knowledge to select suitable and safe toys for their pets.

Combined with the impact of security on consumption intentions, the following hypothesis is proposed:

- H5: Security has a significant positive impact on consumption intentions.

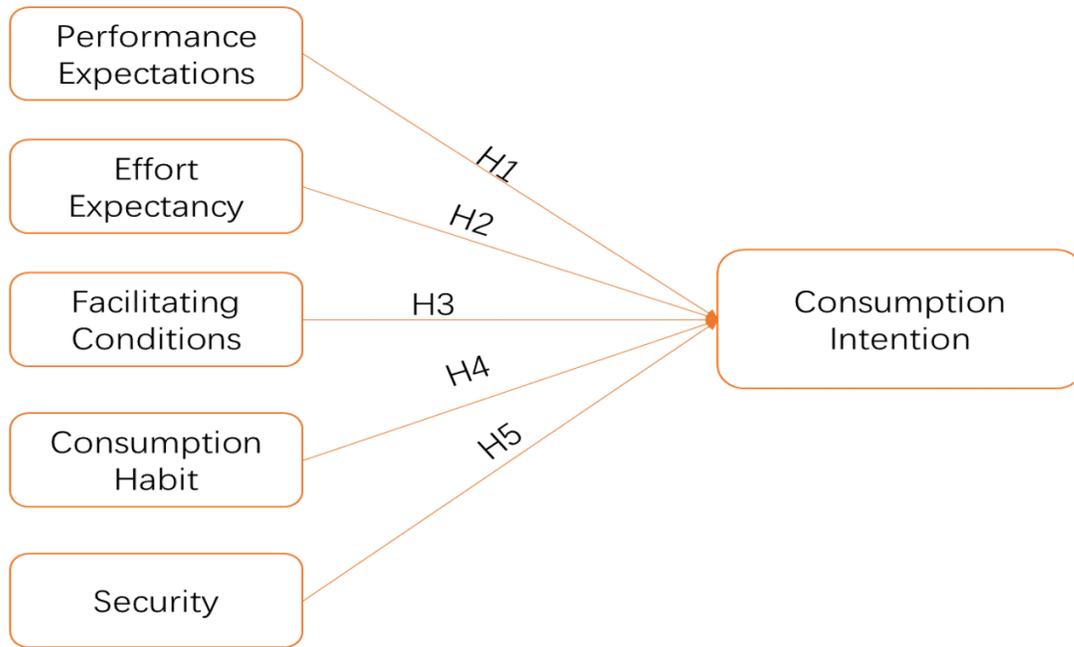


Figure 1. Research Model

5. Questionnaire Design

5.1. Questionnaire Design

The three questions regarding Performance Expectations are from Shreve^[15] and Burghardt^[16], the three questions about Effort Expectancy are from Byrne et al.^[17] and Jackson et al.^[18], the three questions on Facilitating Conditions are from Lim et al.^[19] and Rita et al.^[20], the three questions about Consumption Habits are from Shah A et al.^[21], the three questions on Security are from Paula et al.^[22] and Aurisano N, et al.^[23], the three questions about consumption intention are from Liu X, et al.^[24].

5.2. Sampling

Relevant guidelines and regulations were well performed in all procedures of this study. Ethics Committee of Henan University of Urban Construction has approved all experimental protocols, including those involving various ethical behaviors and any relevant details. Informed consent was obtained from all participating subjects and/or their legal guardians.

We distributed a large number of questionnaires through the Internet. The distribution of these questionnaires covered all provinces in China. When consumers receive the questionnaires, they only need to scan the QR code above to participate in this questionnaire survey.

6. Data Analysis and Statistics

6.1. Descriptive Statistical Analysis

This survey is a questionnaire on the influencing factors of consumers' consumption intentions for pet toys. All the survey contents and forms of this study comply with relevant guidelines and ethical constraints. An informed - consent form is set before the questionnaire, and all respondents agree that the data obtained from the questionnaire survey will be used for this study. The questionnaire was written on Website and distributed through social - media platforms, and participants filled out the questionnaire by scanning the code. A total of 282 valid questionnaires were collected from the start to the end of the survey for the data analysis of this study. The personal information obtained from this survey is shown in Table 5.1, the descriptive statistics of the sample.

Statistical characteristics		frequency	percentage
Gender	Male	84	29.79%
	Female	193	68.44%
	Other	5	1.77%
Age	<18	23	8.16%
	18-35	166	58.87%
	36-55	68	24.11%
	>55	25	8.87%
Academic Degree	Refusal to disclose	52	18.44%
	High school	44	15.6%
	Bachelor	169	59.93%
	Master or above	17	6.03%
Yearly Family Income (USD)	<5,000	77	27.3%
	5,000-10,000	88	31.21%
	10,000-20,000	66	23.4%
	20,000-30,000	36	12.77%
	>30,000	15	5.32%
Occupation	Student	130	46.1%
	Professionals	77	27.3%
	Freelancer	36	12.77%
	Retirement	15	5.32%
	Others	24	8.15%

Table 5.1. Descriptive Statistics of the Sample

6.2. Reliability and Validity Tests

In this study, Smart-PLS 4 is applied to the data analysis process, and the method mentioned by Aburumman^[25]. This is because it has the following advantages: 1. It is widely used in various scientific research fields, such as marketing, behavioral finance, information systems, organizational behavior, etc.; 2. It is often used for new research topics and is good at small - scale data analysis; 3. It has a relatively excellent human - machine interface, and there are many ready - made research models available for selection; 4. It has a relatively good calculation speed and has low requirements for data pre - processing. Based on these advantages and its applicability to this research topic, it is selected as the research tool for this study.

Variables	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Convenience	0.832	0.832	0.899
Effort expectancy	0.846	0.849	0.907
Security	0.805	0.807	0.885
Consumption habit	0.825	0.825	0.896
Consumption intention	0.842	0.842	0.905
Performance expectation	0.851	0.852	0.909

Table 5.2. Reliability and Validity Test Table

In general, the research of Forero on the effective range of Cronbach's alpha and the value range in Kalkbrenner's research are referred to^{[26][27]}. According to the data in Table 5.2, the Cronbach's alpha coefficients of the six factors, namely facilitating conditions, effort expectancy, security, consumption habit, consumption intentions, and performance expectations, are all higher than 0.70, indicating high reliability. Moreover, the composite reliability values of these six factors all meet the requirements, indicating that all five hypotheses are valid under the premise of good reliability test results.

	standard deviation	T value	P value
Convenience	0.063	2.876	0.004
Effort expectancy	0.059	2.140	0.032
Security	0.059	2.113	0.035
Consumption habit	0.071	3.251	0.001
Performance expectation	0.065	4.781	0.000

Table 5.3. Model Results Table

When the P - value is less than 0.05 and the T - value is greater than 1.96, the corresponding hypothesis is valid; otherwise, and it is not. According to Table 5.3, it can be seen that the T-values of facilitating conditions, effort expectancy, security, consumption habit, and performance expectations are all greater than 1.96 and the P - values are less than 0.05, indicating that these five factors have a significant impact on purchase intentions, and all five hypotheses are valid.

From the calculation results (Figure 5.2, the model results diagram), it can be seen that R^2 is 77.3%. This means that the five factors of performance expectations, effort expectancy, facilitating conditions, consumption habit, and security can collectively explain 77.3% of the consumption intentions in this study.

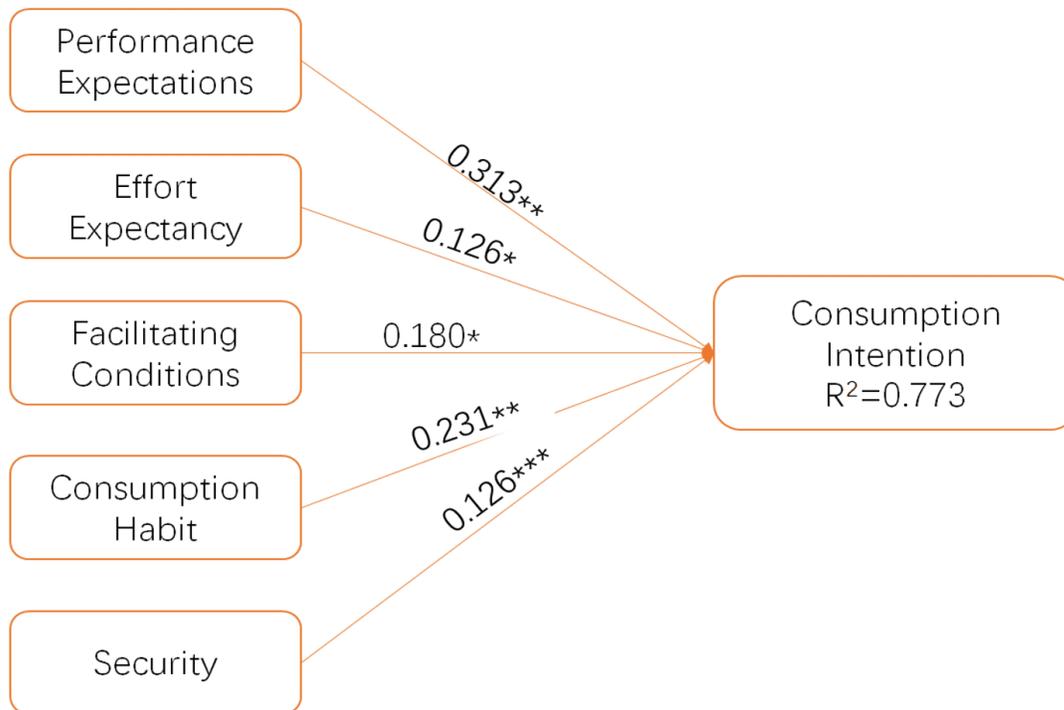


Figure 2. Strutural Model P<0.05 (*) P<0.01 (**) P<0.001 (***)

7. Conclusions

Based on the results of the questionnaire survey and the research, the following main conclusions can be drawn:

Consumer Characteristics: The majority of participants are female, and the age is mainly concentrated between 18 - 35 years old. The educational level is relatively high, mainly undergraduate. The annual family income is mainly in the range of 30,000 - 60,000 yuan, and the occupation distribution is diverse, with students accounting for the highest proportion.

Performance Expectations: Most participants quite agree that pet toys can improve the quality of pets' entertainment activities, enhance the interaction between pets and their owners, and can also play a role in enhancing pets' intelligence. This indicates that performance expectations can promote consumers' consumption intentions.

Effort Expectancy: Most participants stated that they rarely encounter difficulties when using pet toys and can easily operate various pet toys, which means that the simplified operation of pet toys can stimulate consumers' purchasing desire.

Facilitating Conditions: Participants indicated that relevant information about pet toys can be easily found online, the purchase channels are convenient, and they are satisfied with the after - sales service. This shows that convenience conditions play a positive role in consumers' consumption intentions.

Consumption Habit: Most participants said that people around them buy pet toys for their pets and that they buy pet toys because pet toys can bring joy to pets. This indicates that consumption habits have a promoting effect on consumers' consumption intentions.

Security: Most participants believe that the materials of pet toys are not safe, the quality is not good, and there are often negative reports about pet toys on the Internet. This high perception of hazards helps consumers pay more attention to healthy and safe products when choosing pet toys, which has a promoting effect on consumption intentions.

Consumption Intentions: Participants generally believe that pet toys can enhance the relationship between pets and their owners, are willing to recommend them to others, and also intend to continue purchasing in the future. This shows that consumers have a strong consumption intention for pet toys, and the market potential is huge.

8. Suggestions

It is recommended to conduct in - depth interviews with respondents with different opinions to understand their specific concerns and feedback, so as to improve product design and functions. Strengthen the promotion of pet toys, consider launching different types of pet toys to meet the needs of different pets and improve overall satisfaction. It is also possible to consider organizing some interactive activities for pet toys, encouraging owners to participate with their pets to enhance the user experience and brand loyalty. Or cooperate with pet trainers to provide professional guidance on how to select and use pet toys to enhance user confidence and satisfaction.

Provide more educational resources and guidance to help participants better understand and use pet toys, especially for those users who find it difficult. Carry out highly interactive training activities to increase participants' practical operation opportunities and enhance their confidence and skills. Collect more feedback to understand specific difficulties and needs, so as to improve educational materials and support methods in a targeted manner. Regularly conduct market research to understand changes in user needs and quickly respond and optimize products.

It is suggested to offer better online sales service provider to provide users with varieties of pet toys. Improve the distribution and service quality of offline stores to ensure the convenience of customers when shopping in physical stores. Provide diversified payment methods and delivery options to enhance the overall shopping experience. Establish a user - feedback channel, collect the problems encountered by users in the process of information - seeking, and adjust and optimize the information - presentation method in a timely manner. Increase various forms of content such as videos and graphics to meet the preferences of different users and improve the attractiveness and usability of information. Enterprises can also consider conducting follow - up visits to highly satisfied customers to understand their needs and better optimize services.

Strengthen the promotion of pet toys, especially by emphasizing their positive impact on pets' emotions and mental health to attract more consumers to buy. Encourage users to share the pleasant experiences of their pets using toys to enhance the trust of potential customers through real - life cases. Develop more types and functions of pet toys according to consumers' positive feedback to meet the needs of different pets and further increase market share. For consumers with uncertain or neutral attitudes, enhance their awareness of the value of pet toys through education and information dissemination and encourage them to try to buy. Provide preferential activities or bundled sales to attract more consumers to try to buy pet toys and thus increase overall market sales.

Regarding this issue, it is recommended that enterprises and relevant institutions strengthen the quality monitoring of pet toys, improve product - safety standards, and improve consumers' trust through transparent information release and active brand promotion. Merchants should pay attention to product quality, especially in the selection of pet - toy materials, and try to use safe and environmentally friendly materials to improve consumers' trust and satisfaction. In addition, consumers' trust can be enhanced through transparent production processes and material-source descriptions and consumers' concerns can be actively responded to. Merchants can also consider conducting market research to understand consumers' specific needs for materials and safety, so as to better meet market expectations.

It is recommended that increasing the promotion of pet toys, especially their positive impact on pets' psychology and behavior, to enhance consumers' sense of identity. Secondly, based on user feedback and case sharing, it is suggested to display real stories of the enhanced relationship between pets and owners due to toys to enhance emotional resonance. Product-education promotion can also be increased, such as emphasizing the benefits of toys for pets' health and happiness, or providing trial experiences to improve their sense of identity and purchase intentions. Recommendation-reward activities can also be

considered to encourage consumers to share and recommend products, thereby further enhancing the brand's reputation and influence.

9. Limitations and future research

The survey subjects are mainly concentrated in the student and youth group, lacking the views of older or adult groups. When analyzing consumption intentions, relevant variables such as personal innovativeness, cultural customs, and personal preferences are not fully taken into account, and these may all affect consumers' consumption decisions. The future research may have more research factors with different theories among different groups.

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