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Research on the Cognition and Consumption Willingness of Jinan Citizens to Pet Insurance

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Abstract: With the improvement of residents' living standards, pets play an increasingly important role in the family, and the pet insurance market is gradually emerging. This study takes Jinan residents as the survey object. The results show that Jinan residents have a low awareness of pet insurance, but among the pet owners, a certain proportion of residents show a high willingness to consume. Through the influencing factors, it is found that keeping pets, pet health, income level and other factors have a significant impact on consumption willingness.

Keywords: Residents of Jinan City; Pet Insurance; Degree of Cognition; Consumption Willingness.

1. Research Background

1.1. Background

In recent years, with the improvement of people's living standards and changes in social structure, pets have become more and more important in the hearts of people living alone and "empty nesters". The scale is about 311.7 billion yuan. Affected by changes in the social demographic structure, the increasingly intimate relationship between people and pets, and the rational upgrading of pet owners' consumption awareness, the pet consumption market continues to grow. It is estimated that the scale of my country's pet consumption market will reach 392.4 billion yuan in 2023. According to relevant data, the scale of the national pet consumption market is growing, and pets are playing an increasingly important role in people's lives and have become important members of many families. With the change of the concept of keeping pets, pet owners are paying more and more attention to the health and medical treatment of pets [1].

At the same time, pet medical expenses are also rising, which has brought certain economic pressure to pet owners. As a product that can effectively share pet medical risks, pet insurance has gradually entered people's field of vision. As the capital city of Shandong Province, Jinan has a large number of pet owners and an active pet market. Therefore, understanding the awareness and willingness of Jinan residents to consume pet insurance is of great significance for promoting the pet insurance market in Jinan and even the whole country.

1.2. Literature Review

At present, there are few special studies on Jinan residents' awareness of pet insurance, but we can get a glimpse of it from the overall research on the pet insurance market [2]. Nationwide, the awareness of pet insurance is generally low, and Jinan City is likely to be in this trend. The "Pet Insurance Penetration Rate is Low and the Consumer Market Urgently Needs Regulation" released by Guangming.com pointed out that the domestic pet insurance market is in its infancy, and the overall penetration rate is less than 1% [3]. The main reasons are the small market size, difficulty in claim settlement, and insufficient consumer awareness. As a second-tier city, Jinan is affected by factors such as insufficient insurance promotion and complex product terms. Residents have limited access to pet insurance. Most of them obtain a small amount of information through the Internet, pet hospitals and other channels, making it difficult to fully understand pet insurance [4].

Judging from the willingness of domestic pet owners to consume pet insurance, there is a clear differentiation. In Jinan, groups with high incomes, young people and high emotional dependence on pets have a higher willingness to consume. Qilu Yidian report "Pet Insurance Becomes a New Choice for" Shit Shoveling Officials "mentioned that" Insights into the Trend of the Pet Digital Insurance Industry in 2023 "shows that" post-90s "and" post-95s "are the main force of pet insurance, and this group of people is in Jinan It may also be a potential consumer of pet insurance [5]. They regard pets as family members and are willing to invest money in pet health protection to cope with possible high medical expenses. On the contrary, some residents have low willingness to consume due to economic factors, low trust in insurance, and low probability of pet illness [6].

2. Survey Design and Implementation

2.1. Questionnaire Design

According to the purpose and significance of our survey, the questionnaire is designed as follows Table 1.

2.2. Sample Size Calculation

We use the proportion of the number of people who have a general or above understanding of pet insurance in the pre-survey to the total number of people as the overall proportion p to determine the sample size. Therefore, we recorded the overall proportion p as 0.736 based on the pre-survey results. According to the sample size calculation formula, we can get the sample size calculation formula as:

$$n = \frac{Nt^2 p(1-p)}{Nd^2 + t^2 p(1-p)} \tag{1}$$

Table 1. Questionnaire Design Framework

Research Category	Specific aspects	Research questions	Corresponding topic
Consumer perception		Have you heard of pet insurance, what channels did you learn about pet insurance through, and how much you know about pet insurance?	14,15,16
Consumer behavior	Purchase intention	Do you plan to purchase pet insurance, consider the protection aspects you want to cover when purchasing, the acceptable annual premium range, and the preferred premium payment	20,21,22,23
	Attitude tendency	Whether pet insurance is necessary for families with pets, how much role pet insurance can play in protecting pet health, and their recognition of views on pet insurance	17,18,19
	Buying experience	Evaluation of existing pet insurance products on the market, hindering factors when not purchased, and satisfaction with the actual effect after purchase	25,28,30
	Consumption motive	The needs of pet insurance in dealing with pet health and accidents	20
Pet insurance market	The product itself	Specific demand preferences for pet insurance products, additional services or discounts that they want to provide on the existing basis	26,27
	Marketing sales	The main factors affecting the purchase of pet insurance (related to the market, such as the reputation of insurance companies, etc.)	24

Among them, according to the data, the population of Jinan City is 9.437 million. Under the confidence level of 95%, according to the requirement that the acceptable error does not exceed 5%, the formula is brought into the formula, and the sample size is calculated as follows:

$$n_0 = \frac{9437000 \times 1.96^2 \times 0.77 \times (1-0.77)}{1.96^2 \times 0.77 \times (1-0.77) + 9437000 \times 0.05^2} \approx 272 \qquad (2)$$

Combining the pre-survey and relevant literature materials, we adopt a sampling design effect coefficient of 1.8, and considering the pre-survey recovery rate and other factors, we set the effective rate of the questionnaire to be 90%, and we can obtain the total number of questionnaires issued by the survey The quantity is:

$$n = n_0 \times deff \div r = n_0 \times 1.8 \div 0.9 \approx 544 \qquad (3)$$

So, we need to distribute at least 544 questionnaires to ensure that the sample is representative and reliable.

2.3. Control

2.3.1. Reliability

First of all, the reliability of the scale questions in the questionnaire collected in the pre-survey is carried out. The following table shows the results of the Cronbach's α coefficients of the models established for each scale question, which are used to measure the reliability level of the data.

Table 2. Cronbach's alpha coefficient

Cronbach's alpha coefficient	Cronbach's alpha	Number of items	sample
0.91	0.898	7	63
0.968	0.948	5	63
0.945	0.945	6	63
0.952	0.952	4	63
0.957	0.957	4	63

All the models constructed based on the scale questions showed that the value of Cronbach's α coefficient was higher than 0.85, which fully demonstrated the good reliability of the questions involved in the questionnaire.

2.3.2. Validity

Table 3. Results of KMO test and Bartlett test

Title	KMO	Bartlett test		
		Approximate chi-square	df	P
16	0.884	507.929	15	0.000***
23	0.907	676.412	10	0.000***
27	0.897	549.013	15	0.000***
28	0.812	430.765	6	0.000***
Total	0.757	2428.314	300	0.000***

According to the data in the above table, KMO test and Bartlett spherical test were carried out for each individual scale question and all the scale questions. The results showed that the KMO values were all over 0.75, indicating that there was a significant correlation between the item variables, a prerequisite for the factor. At the same time, the P values of Bartlett's test were all lower than 0.05, reaching the significance level, which further verified the feasibility of carrying out the factor. To sum up, the content validity of the questionnaire was rated as good.

3. Weight of Purchase Willingness and Consumer Preference

3.1. Consumption Willingness

After understanding pet insurance, 53.81% of users will have the willingness or behavior to consume and shop, of which 20.11% will definitely buy, and 33.70% may buy. In addition, 30.98% of users are uncertain, 7.07% of users may not buy, and 8.15% of users will definitely not buy. Accordingly, most users will have a willingness to consume.

In order to explore the relationship between the acquisition channels of pet insurance information and the purchase behavior, it is found that among the users who will definitely have purchase behavior, the proportion of pet insurance through insurance company promotion activities, social media platforms, and network information is relatively high. The proportion of pet insurance recommended by the hospital is low; Most of the users who may have purchase behavior learn about pet insurance through social media platforms and online information; Among users who are not sure whether they will have purchase behavior, they mainly learn about pet insurance through the recommendation and introduction of pet hospitals. In addition, they also learn about pet insurance through insurance company promotion activities, social media platforms, and online information, and the proportion of these three categories far exceeds that of certainty. Users who will have purchase behavior and users who may have purchase behavior. From this, it can be concluded that the understanding channels for pet insurance will have an impact on purchase behavior.

3.2. Will not Produce Consumption Willingness or Behavior

Table 4. Calculation results of entropy weight method

Options	Information entropy value e	Information utility value d	Weight (%)
Insurance clauses are complicated and difficult to understand	0.793	0.207	16.482
The claim settlement process is full of difficulties	0.748	0.252	20.117
Premium prices are too high	0.767	0.233	18.544
The guarantee content is not comprehensive enough	0.771	0.229	18.219
Concerns about personal data privacy and security	0.841	0.159	12.666
Lack of trust in insurance companies	0.825	0.175	13.972

The table uses the entropy weight method to calculate the weights of each option. It can be seen that the larger weight of the index is 20.117% that the claim process is difficult, 18.544% that the premium price is too high, and 18.219% that the protection content is not comprehensive enough. As a result, the claim settlement process is full of difficulties, the premium price is too high, and the protection content is not comprehensive enough. These three indicators affect the degree to which users do not have a willingness to consume. Therefore, merchants should pay attention to the complexity of the claim settlement process during the sales process, arrange insurance costs reasonably, and maximize the practicality of insurance.

3.3. Purchase Drivers Importance Ranking

The above table shows the weight calculation results of the CRITIC method, and the weight of each indicator is carried out according to the results. The CRITIC method can objectively reflect the weight of indicators. Specifically, it is based on the conflict and contrast intensity between evaluation indicators, and its conflict and contrast intensity are respectively based on the correlation and difference between indicators. reflected in the form. Indicator variability is poor, and the greater the difference, the greater the weight. Conflict is the correlation coefficient, the stronger the correlation between indicators, the lower the conflict and the smaller the weight. The amount of information is index variability x conflict index.

Table 5. Purchase Decision Drivers

Options	Index variability	Indicator conflict	Quantity of information	Weight (%)
High and low prices	1.309	0.327	0.428	19.175
The breadth of insurance coverage	1.283	0.306	0.392	17.569
Convenience of claim settlement process	1.243	0.316	0.393	17.608
Reputation and reputation of insurance companies	1.23	0.365	0.449	20.102
Your own understanding of pet insurance	1.155	0.494	0.57	25.546

It can be seen from this: the maximum value of the index weight is 25.546% of their own understanding of pet insurance, and the minimum value is 17.569% of the width of the insurance scope. The user's understanding of pet insurance is the primary factor for users to decide whether to buy pet insurance, so enterprises It is necessary to increase the publicity of pet insurance so that more users can understand pet insurance.

3.4. Consumers' Preference for Pet Insurance Protection Types

Table 6. weight calculation result

Options	Complex correlation coefficient R	Reciprocal 1/R of complex correlation coefficient	Weight (%)
Reimbursement of medical expenses when a pet is sick	0.521	1.918	31.853
Compensation for accidental injury to pets	0.601	1.663	27.607
Subsidy for the cost of finding a lost pet	0.801	1.249	20.738
Pet Third Party Liability Insurance	0.839	1.193	19.801

The above table shows the weight calculation results of the independence weight coefficient method, and the weights of each indicator are carried out according to the results: the larger the R value of the complex correlation coefficient, the more repetitive information, and the smaller the weight. The larger the 1/R value of the complex correlation coefficient, the greater the weight should be. The weight is normalized by the reciprocal 1/R value of the complex correlation coefficient.

The weight calculation results of the independent weight coefficient method show that the maximum weight of the index is 31.853% for the reimbursement of medical expenses when the pet is sick, and the minimum value is 3.318% for the pet third party liability insurance. From the independent weight coefficient method, we can see that the public is most inclined to be in medical insurance, which shows that medical insurance plays an extremely important role in public's daily life.

3.5. Importance Ranking of Customer Demand Preference

Table 7. Requirement Preference Weight Calculation Results

Options	Index variability	Indicator conflict	Quantity of information	Weight (%)
Direct payment service for medical expenses	0.427	4.218	1.801	18.663
Comprehensive pet health management services	0.467	3.374	1.576	16.338
Partial reimbursement of vaccine costs	0.453	3.157	1.431	14.83
Exclusive insurance products specifically for elderly pets	0.479	3.465	1.659	17.194
Discount offers for genetic testing services	0.504	3.134	1.579	16.37
Premium refund mechanism in the case of no claim	0.504	3.181	1.602	16.605

The above table shows the weight calculation results of the CRITIC method, and the weight of each indicator is carried out according to the results. Indicator variability is poor, and the greater the difference, the greater the weight. Conflict is the correlation coefficient, the stronger the correlation between indicators, the lower the conflict and the smaller the weight. The amount of information is index variability x conflict index. The weight is the normalization of the amount of information.

The maximum value of index weight is 37.963%, and the minimum value is 14.83%. As a result, users prefer direct payment services for diagnosis and treatment expenses and exclusive insurance products for elderly pets. Merchants can launch some direct payment services for diagnosis and treatment expenses and exclusive insurance products for elderly pets.

4. Factors for Various Factors in the Future of Pet Insurance

The factor is to explore the basic structure of the observed data by explaining the information of all variables as much as possible through a few factors: the value of KMO is 0.799, and the significance P value of Bartlett's sphere test is 0.000 * * *, showing significance on the level, rejecting the null hypothesis, there is correlation between variables, the factor is valid, and the degree is average.

Table 8. KMO test and Bartlett's test

KMO test and Bartlett's test		
KMO		0.799
Bartlett's test	Approximate chi-square	185.121
	df	6
	P	0.000***
Note：***, **, *represent the significance level of 1%, 5% and 10% respectively		

The results of the KMO test showed that the value of KMO was 0.799. At the same time, the results of the Bartlett spherical test showed that the significance P value was 0.000 * * *, showing significance at the level, rejecting the null hypothesis, there was correlation between the variables, and the factors were valid., the degree is general.

Table 9. Factor Load Factor Table

post-rotation factor load factor table		
	post-rotation factor load factor	Common degree
	Factor 1	
Improve the transparency of product information and allow consumers to clearly understand product details	0.9	0.81
Increase publicity and promotion efforts to enhance public awareness	0.9	0.811
Improve relevant laws and regulations to standardize market order	0.813	0.661
Enhance the innovation of insurance products, improve services, and increase the application of technology	0.931	0.868

The above table is a table of factor load factors, which can be used to determine the importance of hidden variables in each principal component. Factors for advice to enterprises: improve the transparency of product information, so that consumers can clearly understand product details; Increase publicity and promotion efforts to enhance public awareness; Improve relevant laws and regulations to standardize market order; Enhance the innovation of insurance products, improve services, and increase the application of technology. The above four factors have a small gap in importance and a high degree of importance.

To sum up, companies should improve the transparency of product information so that consumers can clearly understand product details. Enterprises should increase publicity and promotion efforts, enhance public awareness, improve relevant laws and regulations, and standardize market order. Enterprises should strengthen the innovation of insurance products, improve services, and increase the application of technology, to promote the turnover of pet insurance.

5. Conclusion

Through the survey of Jinan residents, this study found that Jinan residents have a low degree of awareness of pet insurance, but among the pet owners, a certain proportion of residents show a high willingness to consume. Factors that affect residents' willingness to consume pet insurance mainly include keeping pets, the degree of health of pets, and income levels. Studying the influence of these factors on pet medical insurance demand, on the one hand, can enrich the theory of pet medical insurance demand and potential, and further improve the theoretical research of pet medical insurance demand influencing factors, on the other hand, it can also provide suggestions for pet medical insurance in the future according to the actual situation. Residents who have kept pets for a long time, have a high degree of pet health, and have a high income level have a relatively strong willingness to purchase pet insurance. In addition, residents' willingness to pay pet insurance premiums is relatively low, and the channels for understanding pet insurance are relatively limited. In the future, it is necessary to strengthen publicity and promotion, optimize the design of insurance products, and improve residents' awareness and trust in pet insurance, so as to promote the health of the pet insurance market.

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