Doi: 01.0005/j.Interdisciplinary.2023.06.001

An empirical study on the influencing factors of consumers' second–hand car purchase intention

Liyao Wang

Abstract

Based on the theory of consumer behavior and the theory of purchase intention and combined with the actual situation of China's second-hand car market, this paper designs a measurement scale, conducts an empirical survey with potential car buyers as research objects, and uses SPSS software to conduct factor analysis on the survey data. The main influencing factors of second-hand car consumers' purchase intention are studied. This paper draws the following conclusions: Firstly, among the direct influences on purchase intention, perceived value has the most significant influence. It shows that perceived value is an essential antecedent of second-hand car consumers' purchase intention, and high perceived value can improve the purchase intention of second-hand car consumers. Perceived benefits directly impact the purchase intention and indirectly affect the purchase intention of second-hand car consumers through perceived value. Secondly, the perceived risk of second-hand car consumers has a significant impact on their perceived value and purchase intention, which indicates that when considering the purchase of a second-hand car, there is an invisible mental risk in the mind of consumers, which will seriously inhibit the enthusiasm of second-hand car consumers to buy. Finally, the reference group also has a particular influence on the purchase intention. This indicates that when consumers consider buying used cars, they will not only evaluate the value of things in their minds but also be influenced by the outside world.

Keywords: Influencing factors; Second-hand car; Empirical study

1. Introduction

From the research background, as the second-hand car market continues to mature, the focus of competition between dealers is no longer on the quality of vehicles but on consumers. The core of sales is the analysis of consumer decisions. Due to the improvement in people's living quality, consumers' consumption concept has also changed a lot. However, consumers' thinking could be more precise, challenging sellers to take further action. In this consumer-led market, a seller should first understand consumers' purchase motivation, purchase behavior, and the key factors affecting their purchases to meet consumers' demands, formulate reasonable marketing strategies, and improve their competitiveness. Based on such background, the study on the influencing factors of second-hand car consumers' purchase decisions can accurately grasp the needs of consumers and avoid blind consumption, post-purchase dissatisfaction, and even benefit damage caused by consumers' impaired cognition of second-hand cars or backward consumption concept. It can also correct and improve the second-hand car market strategy more accurately so that dealers and consumers to achieve the purpose of a win-win so that both sides of the transaction can be completed.

From the perspective of research significance, first, it is of guiding significance to the marketing strategy of the second-hand car market and the formulation of enterprise strategy. The core of marketing strategy in any market is consumers. How used car consumers make purchasing decisions, through what channels, how to obtain vehicle information, and how to make adjustments or changes to meet the needs of consumers are all issues that dealers need to think about deeply when faced with changes in the buying behavior of used car consumers. Grasp the second-hand car consumer purchase motivation and decision influencing factors. This paper guides positioning, pricing, and sales strategy for Chinese second-hand car dealers. The second provides specific theoretical guidance for used car consumers to make decisions. The purchasing decision of used car consumers is a behavioral decision of uneasy psychology. How do the factors affected by the decision-making affect consumers? How can we improve the influence of these factors on consumers' purchasing decisions? It has good theoretical value to the natural side. Third, promoting the development of China's automobile industry is significant. The second-hand car market is expanding, the consumer consumption level is improving, and the consumption concept is gradually maturing. These all will bring to our country the used car business the fast development—construction of purchasing decision models for second-hand car consumers. Moreover, verifying the importance of factors affecting consumer purchase decisions can better guide purchasing Chinese

second-hand car enterprises and consumers and promote the development of our auto industry.

In this paper, the second-hand car market is expanding day by day; consumers' consumption concept is becoming more mature, consumption power is gradually increasing, and the purchase of second-hand cars is becoming more and more popular, and second-hand car consumers are taken as the research object. Whether consumers' purchase actions are implemented for the purpose of decision-making research, the factors affecting consumers' purchase decisions are further verified by the principal component analysis method by establishing the second-hand car consumer purchasing decision model. The conclusions are drawn from the analysis results, which can guide enterprises, markets, or governments in making decisions, sales strategies, and policy preferences for second-hand car consumers.

2. Literature review

2.1 Research on the second-hand car market

In 1970, in his paper *Lemon Market: Quality Uncertainty and Market Mechanism*, American economist Akerlof took the second-hand car market as an example and proposed the theory of information asymmetry and adverse selection for the first time. Information asymmetry means that in the transaction, the seller and the buyer have different information about the product, and generally, the seller has more information about the product. Adverse selection means that the trading subject with high product quality will withdraw from the trading market under a certain price level. In contrast, the trading subject with low product quality will enter the market. The problem of adverse selection in the second-hand car market is rooted in the asymmetry of the quality information of the second-hand car between the buyer and the seller, who knows the actual quality of the car (the performance, maintenance degree, and damage degree of the second-hand car, etc.). However, the buyer does not know; the buyer is only willing to pay the average price to buy the car, resulting in the high-quality used car being out of the market; in the equilibrium situation, the transaction is low-quality cars, the extreme situation is that the second-hand market will not exist.

Using the car market as an example, Purohit (1992) studied the relationship between used car prices and the market for new cars and found that the constant introduction of new models impacts used car values. If the new model changes little, its used car price will be firm; if the new model changes significantly, its used car will depreciate quickly. Meanwhile, it is pointed out that the value of used cars will also affect consumers' willingness to buy new cars. If the depreciation of used cars is slow, consumers will be more willing to buy this new car.

He (2003) and Cheng (2004) made a comparative analysis of the different development statuses of second-hand vehicles at home and abroad. They put forward some suggestions for the primary critical problems existing in developing the domestic second-hand vehicle market. Xiao (2007) studied the appraisal method of second-hand cars based on the replacement cost method, added the value rate, and improved the calculation method of the new rate in the research. In studying the factors affecting the value of second-hand cars, Feng & Wang (2008) extracted the substantive factor, economic factor, and functional factor by the factor analysis method, among which the substantive factor had the most significant influence. Liu (2009) analyzed the development status of China's second-hand car market and the main problems and pointed out that the root cause is a market failure caused by asymmetric information. Through empirical research, Gai (2009) found that three influencing factors, namely basic factor, value-added factor, and additional factor, impact consumers' second-hand car purchase behavior. Tong (2010) uses the theory of information asymmetry to make a game analysis of the behavior of both buyers and sellers in second-hand car trading and establishes the corresponding risk prevention model with the principal-agent theory. Liu (2010) analyzed the differences between domestic and foreign second-hand car trading links from the five aspects of car collection, evaluation, and after-sales, elaborated the reasons for the gap between China and developed countries, and summarized the bottlenecks in the development of China's second-hand car market. Quan (2011) analyzed the information asymmetry in the second-hand car trade and its influence on the development of China's second-hand car market and put forward some measures to regulate the second-hand car market using the information asymmetry theory.

To sum up, scholars have mainly analyzed the development status and comparative analysis of the second-hand car market at home and abroad, the influence of information asymmetry and adverse selection on the development of the second-hand car market, and the influencing factors of the value of second-hand cars, etc. However, from the consumers' perspective, there need to be more systematic analyses of the purchase decision behavior of second-hand cars. This paper attempts to use relevant theories to study which factors or variables impact the purchase intention of second-hand car consumers and, based on concluding, to provide marketing suggestions and references for second-hand car dealers.

2.2 Consumer behavior-related theories

There are many aspects involved in the purchasing behavior of consumers. The most common purchasing

mode is a stimulus (S) -Consumer obscure (O) -response (R). It can be seen that consumers decide to buy or give up after complex inner activities under the stimulation of marketing or other aspects (Feng & Meng, 2001; Li, 2004). Howard, Sheth Model, and Nicosia model use the knowledge of social psychology and management to consider purchasing behavior from four aspects: stimulus input variable, external factor, internal process, and output result variable. Under the influence of certain psychological needs, consumers' purchase decision is a process in which they finally make behavioral responses through inner activities, mainly including the confirmation of needs, information search, evaluation of choice and purchase, and post-purchase behavior.

2.3 Theory of perceived risk

When consumers are not sure whether a product or service can achieve the expected goal after purchasing it, they will feel fear; that is, they will have perceived risk (Cox & Rich, 1964). Bauer (1960) extended the concept of perceived risk from psychology. He believed that consumers could not predict whether purchase behavior would achieve their goals, and some purchases might make them unhappy. Bauer divided perceived risk into two aspects: the uncertainty of whether the purchase decision can meet the purpose and the importance of the loss caused by the wrong decision. Thus, perceived risk is a personal risk based on individual subjective evaluation. Cox and Rich (1964) believe that perceived risk is the nature and magnitude of the risk consumers feel in a special decision-making activity. Cunningham (1971) believes that perceived risk is consumers' perception of the uncertainty of whether something happens or not and the danger degree of the result after it happens. Derbaix (1983) believes that perceived risk comes from a sense of uncertainty that consumers cannot predict the quality of the products they buy and the results they bring. Taylor (1974) believes that when consumers realize that they will take various forms of risks when buying the products or services they want, they will hesitate and take various ways to reduce the risks to an acceptable level to reduce the severity of the consequences of the purchase. If the risks are not acceptable, consumers may not buy them. Garretson and Clow (1999) pointed out that consumers may hesitate to make purchase choices because of perceived risks. Consumers usually choose to search for information to reduce risks and uncertainties, reduce purchasing behaviors or buy products with lower risks to deal with perceived risks.

Because consumers cannot be sure of the expected effect of the purchase result, there is always the perceived risk when they choose the product to buy, and it is no exception when they buy a second-hand car. Due to information asymmetry in the second-hand car market, the seller has more vehicle information than the buyer, such as vehicle accidents, mileage, quality, etc. The seller will deliberately hide such information from the buyer for economic benefits. Meanwhile, there is no professional authoritative second-hand car appraisal and evaluation institution in China, so consumers may run the risk of quality and price fraud when choosing to buy second-hand cars. After-sales service is not guaranteed, and other risks, these risks will hurt consumers buying used cars.

2.4 Theory of perceived value

Monroe and Krishnan (1985) believe that perceived value comes from the relative relationship between the benefits brought by the product and the cost paid for the product. When the perceived cost of the product is smaller than the perceived benefit, the greater the perception of value will be. Zeithaml (1988) studies perceived value from the perspective of psychology. He believes that perceived value is the overall evaluation of the utility of a product or service by consumers after weighing the benefits they receive and the costs they spend in obtaining the product or service. Wood and Scheer (1996) expanded Monroe and Krishnan's understanding of perceived value. They believed that perceived value is the balance and comparison between the profit enjoyed in the transaction of a certain product and the expenditure in the transaction. The profit includes the quality of the product obtained in the transaction. The cost includes both the tangible monetary cost of the transaction and the intangible risk cost to be borne by the spirit and heart. Perceived gain, money spent, and cost of risk (i.e., perceived risk) influence the final purchase choice through the overall estimate of the transaction. Dong et al. (1999) believe that the perceived value of consumers comes from comparison, which is the comparison and measurement of the utility and cost of a product in the whole process of purchase or consumption. Bai & Liao (2001) believes that customers' perception of value is the evaluation and preference generated by customers after weighing the profit and loss of products or services. Cheng & Li (2007) believes that perceived value is the perception and evaluation of the changes in products and enterprises in accordance with the needs of consumers in the whole process of the interaction between consumers and products and enterprises. To sum up, the expressions of perceived value by different scholars are basically the measurement of profit and loss, which is the subjective perception of consumers and reflects the overall subjective evaluation of consumers on a certain commodity.

2.5 Purchase intention theory

Dodds et al. (1991) believe that whether consumers want to buy a product depends on the relative comparison between what they pay and what they get. He studies the relationship between consumers' perception of value and the intensity of their purchase actions through a

value model. Starting from the perspective of consumer psychology, Zeithaml verified with empirical methods that consumers' perceived benefits of products or services were positively correlated with perceived value. The higher the value, the more robust consumers desire to buy products. Using economics, Wu and Mi (2005) analyzed the relationship between the perceived value of jewelry and consumers' purchasing behavior intention and found that individuals' perceived value of products will directly affect consumers' purchasing behavior. Through the above research, it is found that scholars combine elements in economics (benefits, costs, and utility) and elements in psychology (perception, weighing, and evaluation) into the consideration of perceived value and study purchase intention from the perspective of value, which is entirely from the perspective of individual consumers.

3. Discussion

3.1 Research design

3.1.1 Demographic Characteristics

The purpose of the questionnaire is to study the variables affecting consumers' willingness to buy a used car. The questionnaire was designed based on the survey conducted in November 2022. The questionnaire mainly consisted of two parts: firstly, demographic variables (gender, income, education level); secondly, explanatory variables (six in total), including digital music affinity, quality, sensitivity, legal awareness, collective specification, and paying benefits. Thirdly, the explained variables include willingness to pay and the price willing to pay. Questions are set according to previous research to ensure scientific and rigorous research. By combining the current consumption characteristics of digital music, the relevant variables of Chinese consumers' willingness to pay for digital music are manipulated, as shown in the following table. In this paper, Richter 5 sub-scales will be used to present and organize data, clarify data sources, design instructions, and overall analysis of tables.

This paper issues initial questionnaires in the second-hand car market. Research data were obtained through questionnaires sent on the Wenjuanxing app, which were all randomly distributed, a total of 80, and the recovery rate reached 100%, and all truthfully responded. As shown in Table 1, based on the questionnaire, 31.25% of males and 68.75% of females. The survey results show that the majority of respondents are aged between 31 and 45, accounting for 62.5% of all respondents and followed by 18-30 and 45+ age groups, accounting for 18.75%. According to the results of income levels, there are more participants who earn 5001-10000 Yuan income(40%). Then it is followed by 10001-15000 Yuan earners, 20 in total, constituting a quarter. People who earn 0-5000 and 15001-20000 took up the same proportions, for ten candidates each and both of 10% to the whole. As for higher income earners(20000+), there are eight people and comprise 10%. When it comes to education levels, most of them have post graduates degrees (32 people and take up 40%). It is then followed by high school degrees which contain 26 participants, taking up 32.5%. Then there are 17 people who have master's degrees or above (21.25%), and less than 10% of candidates have a junior high school degree or below, totaling five people.

Table 1 Consumer characteristics

Consumer characteristics	categories	frequency	Percentage(%)
gender	male	25	31.25%
	female	55	68.75%
Age groups (years old)	0-18	0	0%
	18-30	15	18.75%
	31-45	50	62.5%
	45+	15	18.75%
Income levels (Chinese Yuan)	0-5000	10	12.5%
	5001-10000	32	40%
	10001-15000	20	25%
	15001-20000	10	12.5%
	20000+	8	10%
Education levels	Primary school degree or below	1	1.25%
	Junior high school degree	4	5%
	High school degree	26	32.5%
	Postgraduates degree	32	40%
	Master's degree or above	17	21.25%

3.1.2 Operationalized Definitions of influencing factors

On the basis of reading a large amount of literature, this paper constructs the measurement items of each

variable in the conceptual model according to the related characteristics of second-hand cars and through small-scale interviews, designs the initial questionnaire, modifies the measurement items in the questionnaire through small sample survey and questionnaire quality analysis, and finally obtains the formal questionnaire. Although the scale adopted in this paper draws on the research results of previous scholars and has certain reliability and validity, in order to ensure the effectiveness and reliability of the questionnaire and avoid mistakes in large-scale sample investigation, this paper needs to conduct a small-scale test before issuing a large number of questionnaires and modify the measurement items of the questionnaire according to the results.

The factors influencing the purchase of second-hand cars should be treated operationally, as shown in Table 2. The scale is divided into six parts; one is perceived value, two is perceived benefits, three is perceived quality, four is reference group influence, and five is perceived price. Sixt is perceived risk.

Perceived value is a consumer's overall evaluation of the utility of a product or service after weighing the benefits gained and the costs spent in obtaining the product or service. It is a subjective perception based on the tradeoff between profit and loss. By referring to the research results of Dodds, Monroe, and Grewal(1991), Zeithaml(1988), and Wood and Scheer(1996), this paper designs the measurement items of perceived value, which reflect the overall value evaluation of consumers on second-hand car products to varying degrees.

Perceived benefit refers to the benefits consumers perceive from products or services, which is a subjective perception evaluation, the degree to which products or services can meet consumers' use and psychological needs, and the degree to which consumers get a sense of value realization. When consumers want to buy used cars, they hope that they can meet their travel needs and psychological needs. For example, when their economic capacity is not high, they can buy used cars as transportation tools to meet travel needs, or they can buy brand-name models with high configurations at a low price to meet their psychological needs. Based on the above analysis, on the basis of the research results of Monroe and Krishnan et al. (1998), the measurement items of perceived benefits were designed in combination with the specific commodity of used cars.

Perceived quality is different from the objective actual quality. It is a comprehensive abstract, subjective evaluation of a product made by consumers according to their own needs and preferences and by integrating various information resources obtained through various channels. In his research, Zeithaml holds that perceived quality is consumers' judgment on the overall advantages or performance of a product, which is a comprehensive subjective evaluation and requires consumers to make judgments in comparison. Referring to the studies of Zeithaml(1988) and Dodds, Monroe, and Grewal(1991), this paper designs the measurement items of perceived quality based on the characteristics of second-hand cars.

Perceived reference group influence perception refers to consumers' perception of the surrounding groups when they choose to buy a product, which is mainly manifested in whether they will change their purchase or use intention due to their influence. In a specific consumption situation, individuals' beliefs and decision-making behaviors will be affected by the reference group. According to Park and Lessig, the three aspects of information, utilitarianism, and value-performance influence constitute the reference group influence. The information influence shows that individuals make their own decisions by searching for information from others or observing others' consumption. The utilitarian influence shows that individuals win praise or avoid punishment by catering to the preferences of the group. Value expressive influence is expressed as an individual's desire to establish a relationship with the reference group and express his affection for the group. Based on the research results of Park and Lessig(1977) and the characteristics of the used car consumer group, this paper designs the measurement items of the influence perception of the reference group of the used car consumer.

Perceived price refers to consumers' subjective perception of price. When considering whether to buy a product, consumers will not only consider the actual amount of money to be spent but also compare the overall market situation and the amount of money spent on other products, and finally get a subjectively perceived price level of this product. Based on the research results of Zeithaml(1988) and Cheong and Park(2005), this paper designs the measurement items of perceived price.

Consumers cannot predict whether their purchase behaviors will reach the expected purchase goal, and some purchases may make them unhappy, leading to perceived risk. The process of individual decision-making is designed to minimize risk. Domestic and foreign scholars have conducted in-depth research on perceived risk and its dimensions. Much literature on risk is basically carried out from the six aspects of financial, operational, physical, psychological, social, and time risks. This paper draws on the research results of Peter andTarpey(1975) and Wood and Scheer(1996) and considers that consumers mainly consider quality, price, post-purchase maintenance, and other factors when buying second-hand cars and designs the measurement items of perceived risk in this paper.

Table 2 Questionnaire design of influencing factors of second-hand car purchase

变量	测量题项	度量
perceived value	Q1:Compared with the cost, I think the used car can meet my car purchase needs very well	1=Strongly disagree 2=Disagree 3=Average 4=Agree 5=Strongly agree
perceived benefits	Q2:On the whole, I think buying a used car is worth it	Same as above
	Q3:Compared with not having a car, buying a used car as a means of transportation can facilitate daily travel	Same as above
	Q4:Buying a used car can improve the quality of life compared to not owning a car.	Same as above
	Q5:Buying a used car can add more fun to life than not owning one	Same as above
perceived quality	Q6:Used cars are still very durable	Same as above
	Q7:The quality of used cars is relatively stable and reliable	Same as above
	Q8:The quality of the used car is up to my acceptable quality standard	Same as above
	Q9:I do not think the quality gap between used cars and new cars is that big	Same as above
reference group influence	Q10:If a friend familiar with cars recommends a used car to me, I will buy and use it.	Same as above
	Q11:I would also consider buying a used car if many of my acquaintances were using one	Same as above
	Q12:If I had a used car, I think I would be more involved with my friends who use it	Same as above
perceived price	Q13: Given my current financial situation, the price of used cars is still high.	Same as above
	Q14:If I'm going to buy a used car, I want to wait for the price level to come down before I buy	Same as above
	Q15:I think buying and using a used car will still put a certain amount of financial pressure on my life	Same as above
perceived risk	Q16:I am worried about buying used cars that have been modified or modified after an accident	Same as above
	Q17:I worry that used cars may have frequent problems and need frequent repairs	Same as above
	Q18:I worry that buying a used car will cost me more in repairs and maintenance later	Same as above
	Q19:I am afraid I may be cheated when I buy a used car	Same as above
	Q20:I am worried about the after-sales service of used cars	Same as above

3.2 Empirical analysis

3.2.1 Reliability analysis

Reliability analysis is the test of the validity of the questionnaire, which is tested by Cronbach's alpha reliability coefficient. If the coefficient is more significant than 0.7, the data reliability is highly qualified; If it is between 0.35-0.7, the data reliability is acceptable; If it is less than 0.35, the reliability of the data is not high. The reliability of the items of the variable is tested, and the test results are shown in the table below. According to the test results, the reliability coefficient of each variable is mainly greater than 0.7, and the effect is of high quality.

Table 3 Cronbach's Alpha reliability coefficient analysis

variables	Cronbach's Alpha reliability coefficient
perceived value	0.894
perceived benefits	0.821
perceived quality	0.769
reference group influence	0.766
perceived price	0.892
perceived risk	0.835

3.2.2 Validity test

A validity test is to test the validity of the questionnaire and judge whether the data is suitable for factor analysis. KMO and Bartlett's spherical test generally determine the validity test. When KMO is more significant than 0.7, the questionnaire is valid, and factor analysis can be carried out. When KMO is between 0.6 and 0.7, it means that factor analysis can only be done. When KMO is less than 0.6, it indicates that factor analysis is unsuitable. Bartlett's spherical test is to judge whether the data is suitable for factor analysis by judging whether the correlation coefficient matrix is an identity matrix. If the p-value corresponding to the test result is less than the significance level, the effect of data validity is ideal and suitable for factor analysis. The validity of the items of variables is tested, and the test results are shown in the table below. According to the test results, KMO is more significant than 0.8, and the p-value corresponding to Bartlett's spherical test is close to 0; that is, it is less than the significance level, indicating that the data is suitable for factor analysis.

Table 4 KMO and Bartlett's spherical test

KMO	Bartlett's spherical test		
	APPROX. chi-square	df	sig
0.859	1060.165	190	0.000

3.2.3 Factor analysis

Based on the above test results, this paper will analyze the influencing factors of consumers' willingness to buy a used car. The factor analysis is carried out by SPSS software. The results are shown in the table below.

Table 5 Factor analysis results

options	perceived value	perceived benefits	perceived quality	reference group influence	perceived price	perceived risk
Q1	0.791					
Q2	0.685					
Q3		0.701				
Q4		0.618				
Q5		0.780				
Q6			0.570			
Q7			0.549			
Q8			0.501			
Q9			0.700			
Q10				0.740		
Q11				0.749		
Q12				0.700		
Q13					0.682	
Q14					0.784	
Q15					0.741	
Q16						0.716
Q17						0.465
Q18						0.648
Q19						0.753
Q20						0.677

Table 6 Explained total variance

components	Initial eigenvalue			Extraction sum of squared loading			Rotation sum of squared loading		
	total	variance%	Accumulated total%	total	variance %	Accumulated total %	total	variance%	Accumulated total %
1	8.771	43.856	43.856	8.771	43.856	43.856	5.539	27.697	27.697
2	2.083	10.417	54.274	2.083	10.417	54.274	3.626	18.128	45.825
3	1.629	8.145	62.418	1.629	8.145	62.418	2.197	10.983	56.808
4	1.065	5.324	67.743	1.065	5.324	67.743	2.187	10.934	67.743
5	.943	4.713	72.456						
6	.854	4.269	76.725						
7	.758	3.790	80.515						
8	.631	3.154	83.670						
9	.575	2.873	86.542						
10	.476	2.379	88.921						
11	.381	1.907	90.828						
12	.348	1.738	92.566						
13	.308	1.539	94.105						
14	.262	1.308	95.413						
15	.203	1.015	96.429						
16	.186	.930	97.359						
17	.178	.892	98.251						
18	.143	.715	98.966						
19	.113	.567	99.533						
20	.093	.467	100.000						

Combined with a screen plot and explained total variance graphs, the factors of this questionnaire design can be divided into four factors. From the perspective of the explained total variance, these four factors can explain 64.743% of the variance. From the screen plot, it tends to be flat from the fifth point, and there are four points in front on the steep slope.

The function of the rotated component matrix is to know which questions can be classified as a factor, as shown in the table below. There are four component factors, of which question 1.2.13.14.15 can be classified as component 1 (the first factor). Question 16.17.18.19.20 can be used as the second factor. Question 3.4.5 can be classified as the third factor. Question 6.7.8.9 can be used as the fourth factor. The first factor corresponds to perceived value and price; the second is perceived risk. The third factor reflects perceived benefits, and the fourth factor reflects reference group influence. Therefore, perceived value and price are the top factors affecting consumer willingness, followed by perceived risk.

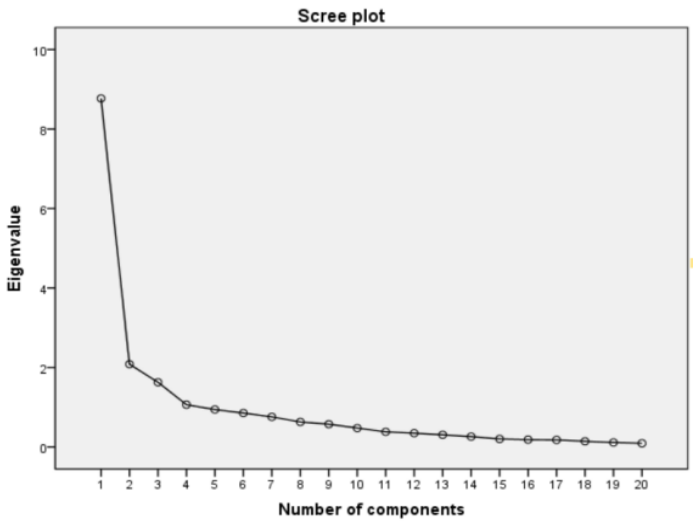

Figure 2 Screen plot

Table 8 Rotating component matrix

	components			
	1	2	3	4
Q5	.849	.207	.156	-.053
Q6	.743	.300	.096	.183
Q7	.100	.345	.753	.069
Q8	.040	.132	.774	-.001
Q9	.540	.458	.522	.080
Q10	.384	.436	.475	.082
Q11	.607	.549	.255	-.075
Q12	.021	-.042	.089	.859
Q13	.040	.147	.022	.823
Q14	.544	-.016	.401	.304
Q15	.452	.103	-.035	.533
Q16	.704	-.064	.207	.397
Q17	.641	.520	.005	.036
Q18	.792	.365	.119	.099
Q19	.757	.332	-.094	.221
Q20	.764	.318	.167	-.063
Q21	.289	.518	.057	.331
Q22	.109	.734	.307	.054
Q23	.250	.805	.203	.035
Q24	.314	.740	.177	.012

4. Conclusion

Based on the previous theoretical and empirical analysis, this paper draws the following conclusions:

Firstly, among the direct influences on purchase intention, perceived value has the most significant influence. It shows that perceived value is an essential antecedent of second-hand car consumers' purchase intention, and high perceived value can improve the purchase intention of second-hand car consumers. Perceived benefits not only have a direct positive impact on the purchase intention but also indirectly affect the purchase intention of second-hand car consumers through perceived value. This indicates that when consumers realize the benefits that second-hand cars can bring to their lives, consumers can increase their value perception and thus enhance their purchase intention.

Secondly, the perceived risk of second-hand car consumers has a great impact on their perceived value and purchase intention, which indicates that when considering the purchase of a second-hand car, because it is uncertain whether the purchase behavior can meet their inner goal or the uncertainty of the purchase result, there is an invisible mental risk in the mind of consumers, which will seriously inhibit the enthusiasm of second-hand car consumers to buy.

Finally, the reference group also has a particular influence on the purchase intention. This indicates that when consumers consider buying used cars, they will not only evaluate the value of things in their minds but also be influenced by the outside world. Consumers will have a firm purchase intention when the outside world has a good evaluation of things. Although perceived quality and perceived price have no direct impact on the purchase intention, they indirectly affect the purchase intention of second-hand car consumers through perceived value. Perceived quality has an indirect positive impact on the purchase intention, while the perceived price has an indirect negative impact on the purchase intention, indicating that when the quality of the second-hand cars is good and the price is low, consumers' value perception will be higher. The purchase intention is firm, and good quality or low price alone has no significant influence on the purchase intention of second-hand car consumption.

5. Evaluation

I have a thorough understanding of scientific research projects, which requires a rigorous logical framework of thinking and a better understanding of the research methods, tools, and data involved in each framework of the paper. The cultivation of the ability to learn the new knowledge system, the ability to sort out all kinds of literature, and the ability to think about each part of the content lay a good foundation, which helps to improve the depth of thinking and broaden the width of learning. Through in-depth and systematic discussion of China's second-hand car market, I have gained a further

understanding of the current development of China's second-hand car market. However, more aspects of the research on China's second-hand car market, such as the relationship between the second-hand car market economy and industrial upgrading and the economic driving effect of China's second-hand car market, have not been further analyzed, and these directions can be studied in the future.

Reference

[1] Akerlof GA. (1970). The market for lemons Quality uncertainty and the market mechanism. Quarterly Journal of Economies, 84 (3): 488–500.

[2] Bai Changhong & Liao Wei. (2001). Research on Customer Satisfaction based on customer perceived value. Journal of Nankai, 6:14-20.

[3] Bauer R A. (1960). Consumer behavior as risk-taking. In R.S. Hancock (Ed.), Dynamic marketing for a changing world. Chicago: American Marketing Association, 3:389-398.

[4] Cheng Haiqing & Li Minqiang. (2007). Connotation, characteristics, and Evaluation of Customer value concept. Journal of Northwest A&F University (Social Science Edition), 2:34-38.

[5] C. Wood, M. (1996). Incorporating Perceived Risk into Model of Consumer Deal Assessment and Purchase Intent. Advances in Consumer Research, 23(1):399–404.

[6] Cheng Jun. (2004). Establish our country's used car market. Automotive Research and Development (04), pp. 37–40.

[7] Cox D F, Rich S J. (1964). Perceived risk and consumer decision making. Journal of Marketing Research,1:32-39.

[8] Cunningham. (1971). Consumer rankings of risk reduction methods. Journal of marketing, 35:56-61.

[9] Derbaix C. (1983). Perceived risk and risk relievers: An empirical investigation. Journal of Economic Psychology,3:19-38.

[10] Dodds, M., Grewal. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. Journal of Marketing Research, 28(3):307–319.

[11] Dong Dahai, Quan Xiaoyan, Qu Xiaofei. (1999). Customer Value and its Composition. Journal of Dalian University of Technology, 2:18-20.

[12] D.Purohit. (1992). Exploring the relationship between the markets for new and used durable goods in the case of automobiles[J].Marketing Science,11(2):154–167.

[13] Feng Xiurong & Wang Bin.(2008). Factors influencing the value of second-hand cars. Business Research (02),102-105.

[14] Feng Liyun, Meng Fengsheng. (2001). Marketing Psychology. Economic Management Press. Li Wenyi. (2004). Automobile Marketing. People's Communications Press.

[15] Gai Guofeng. (2009). Analysis of Factors Influencing Consumer Buying Behavior in the second-hand car Market [J]. Jilin Industry and Commerce Daily, 9:16-19.

[16] Garretson,Judith A.&Kenneth E.Clow. (1999). The Influence of Coupon Face Value on Service Quality Expectation, Risk Perceptions and Purchase Intentions in The Dental Industry. The Journal of Service Marketing,13(1):59–70.

[17] He J Z. (2003). Development status and the prospect of the second-hand car market. China Engineering Consulting (02),37-39.

[18] Liu Enhua. (2010). Analysis of the difference between domestic and foreign second-hand car trading links. Shanghai Automobile, 2:50-53.

[19] Liu Huiqiu.(2009). Current Situation and Development of China's Second-hand car market, Jilin University.

[20] Quan Hu. (2011). Analysis of the influence of information asymmetry on the development of second-hand car market. Automotive Industry Research, p. 8: 25:27.

[21] S. Monroe,B.Kent,R.Krishnan. (1985). The Effect of Price-comparison Advertising on Buyers' Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions. Journal of Marketing, 62(2):46-59.

[22] Taylor J.W. (1974). The role of risk in consumer behavior[J].Journal of Marketing,38(2):54-60.

[23] Tong Jia. (2010). Second-hand Car trading Risk Research and game Analysis. Beijing Jiaotong University.

[24] Wu Liangjin & Mi Zhongchun. (2005). An Economic Analysis of Perceived Value and Purchase Intention of Jewelry. Mall Modernization, 11:24-26.

[25] Xiao D L. (2007). Research on second-hand car appraisal method. Chang 'a University.

[26] Zeithaml Valarie A. (1988). Consumer Perceptions of Price, Quality, And Value: A Means-end model and synthesis of evidence. Journal of Marketing, 52(3):2-22.