Review of Purchase Decision Research on Elderly Furniture in Anhui Province

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Abstract. With the increasing number of the elderly population in Anhui Province, the aging of the population has attracted more and more social attention. This paper analyzes the phenomenon of population aging, combined with the local characteristics of Anhui Province, and analyzes the development of products for the elderly. Using VOSviewer analysis software of Web of Science core collection database in nearly 20 years of literature research, the "household Product"，"purchase decision" keywords for visual analysis, explore the field research hotspot, fill the research blank, for elderly users and research in Anhui province institutions about elderly household products purchase decision reference.

Keywords: Elderly People, Furniture, Purchasing Decision, VOSviewer

1   Introduction

In the 21st century, the world is aging. Asia has become the leader among the world regions to have the largest number of aging populations [1]. China's society has also begun a comprehensive aging stage, and the aging of the population has become a social problem that needs to be solved urgently. With the increasing number of the senior citizen population in Anhui Province, the aging of the population has attracted more and more social attention.

The aging phenomenon not only brings many social problems, but also provides a new direction for the development of the market, and the industry related to the senior citizen has risen rapidly. However, in the senior citizen product market, products designed for the senior citizen have problems such as functions not conforming to expectations, cumbersome operation, and lack of complete design planning by designers, which not only affect the user experience of the senior citizen but also are not conducive to the development of the senior citizen product market[2]. The fitness of the senior citizen household product system directly affects the state of home care, relates to the quality of life of the senior citizen, and also reflects the degree of suitable aging in the town[3].

2   The Aging Situation in Anhui Province Is Severe

According to the census data, the proportion of the population aged 60 and above in China reached 18.70%, of which the proportion of the population aged 65 and above reached 13.50%. The main characteristics of population aging are as follows[4]:

First, the senior citizen population is huge. There are 260 million people aged 60 and above in China, of which 190 million are aged 65 and above. Among the 31 provinces in China, 16 provinces have more than 5 million people aged 65 and above, of which 6 provinces have more than 10 million senior citizen people [5].

Second, the aging process has accelerated significantly. From 2010 to 2020, the proportion of people aged 60 and above will increase by 5.44 percentage points, and the proportion of people aged 65 and above will increase by 4.63 percentage points. Compared with the previous 10 years, the increase rate has increased by 2.51 and 2.72 percentage points respectively.

Third, the quality of the senior citizen population continues to improve. Among the population aged 60 and above, 36.69 million had a high school education or above, an increase of 20.85 million over 2010. The proportion of the population with a high school education or above was 13.90 percent, 4.98 percentage points higher than 10 years ago.

In 2020, the number of people aged 80 or above will reach 35.8 million, accounting for 2.54% of the total population, an increase of 14.85 million, or 0.98 percentage points, over 2010. Population aging is an important trend of social development and a basic national condition of our country for a long period in the future. We should see that population aging promotes the development of the "silver economy", expands the consumption of senior citizen products and services and is conducive to promoting technological progress. This brings new opportunities[4]. Located in eastern China, Anhui Province is known for its rich cultural heritage and diverse population structure. The province's senior citizen population constitutes an important group of consumers whose preferences and needs play a key role in shaping the market for household products[6].

The Anhui Provincial Bureau of Statistics also released the main data of the seventh national population census in Anhui Province. The permanent population of Anhui province was 61.027 million, and the population aged 60 and above was 11.469 million, accounting for 18.79%, up 3.78 percentage points compared with the sixth population census. Both the whole country and Anhui Province are facing the further deepening of population aging, and will continue to face the pressure of long-term balanced population development in the future[4]. The specific age composition of the population of each city in Anhui Province (Table 1).

Table 1. Population Age Composition of Cities in Anhui Province (The National Bureau of Statistics of China, 2021). (Unit:%)

Area	Proportion of permanent residents			
	0-14	15-59	60 and Over	Of which: 65 and Over
whole province	19.24	61.96	18.79	15.01
Hefei	16.52	68.22	15.26	11.99
Huaibei	20.47	63.07	16.46	13.44
Bozhou	25.61	57.89	16.51	13.61
Suzhou	23.53	58.31	18.15	14.83
Bengbu	22.21	59.77	18.03	14.40
Fuyang	24.44	58.69	16.88	13.79
Huainan	19.68	59.34	20.98	16.37
Chuzhou	16.26	63.89	19.85	15.97
Lu'an	18.53	60.21	21.26	16.86
Ma On Shan	14.35	63.92	21.73	17.53
Wuhu	14.54	65.17	20.30	16.11
Xuancheng	13.64	63.78	22.59	18.04
Tongling	14.37	62.94	22.69	17.46
Chizhou	15.58	62.40	22.03	16.74
Anqing	16.68	61.81	21.50	17.06
Huangshan	14.32	61.58	24.10	18.11

3   Methodology and Tools

This study employs bibliometric analysis as a principal methodology for analysing the literature on purchasing decisions. Bibliometrics is a method of assessing the production and development of knowledge in a specific field of study by analysing the quantity and quality of the literature, with the objective of measuring the production and development of knowledge in a particular field of study. Bibliometrics can provide quantitative indicators through statistical analyses, thereby ensuring the objectivity of scholarly output[7]. Concurrently, bibliometric analyses permit the monitoring and delineation of the content and convergence of research on specific topics, thereby assisting researchers in identifying prospective avenues for their research[8,9].

Through scientific bibliometric methods and knowledge structure visualisation, this study used VOSviewer, a bibliometric visualisation software, as a research tool to empirically analyse the retrieved data.VOSviewer is a software tool for visualising and analysing academic literature based on the JAVA program.VOSviewer was developed by Van Eck and Waltman in 2009, is a software for building and visualising networks

of scientific literature[10]. It can help users to understand the correlations and collaborative networks between academic literature through co-word analysis, co-citation analysis and co-citation analysis. It can perform data visualisation, extract hotspots and key concepts in the research field, cluster analysis and time-series analysis of the literature. In recent years, it has been widely used in bibliometric analyses in the international academic community[11,12].

4   Retrieval and Discussion

4.1   Collection of Literature Data

With the help of the VOSviewer tool, the domestic literature on purchase decision-making is systematically sorted out from the aspects of publication years, hot word clustering, and literature characteristics, and the current hot spots and research progress in the research field of purchase decision-making in various countries are analyzed and grasped from a quantitative perspective. presented in a manner. Explore the future development focus of purchasing decisions, which can provide reference and reference for follow-up research[13].

The sample data for the study was sourced from the core collection of the Web of science databases. A total of 964 documents were retrieved by selecting all fields, searching for the keyword 'purchase decision' and setting the publication date from 1 January 2000 to the present. By refining the results, only 954 documents in English were retained. The literature data should be exported in RefWorks format, with the option to select 1-954 articles. It is important to retain the complete record content.

4.2   Literature Year and Country Distribution

The annual volume of publications in the literature provides an objective reflection of the course and speed of development of the discipline in academia, as well as the level of interest in various countries and industries. This clearly signals the enthusiasm and development trends in the study of purchasing decisions. A statistical analysis of the number of publications related to purchasing decisions from 2000 to the present has been conducted. As illustrated in Figure 1, the number of publications in the field of purchasing decision research has exhibited a linear growth trend, reaching a peak of 127 publications by 2021. This evidence suggests that the field of purchasing decision has been a research focus in recent years. In terms of publication output, Figure 2 ranks the ten countries and regions with the highest number of publications. The United States, China, South Korea, United Kingdom, Taiwan, Germany, Spain, Canada, India and Australia are listed in descending order of publication output. China has published 226 research papers on the subject of purchase decision, which places it second in the rankings. This indicates that the research area of purchase decision has been a particularly active field of study in China.
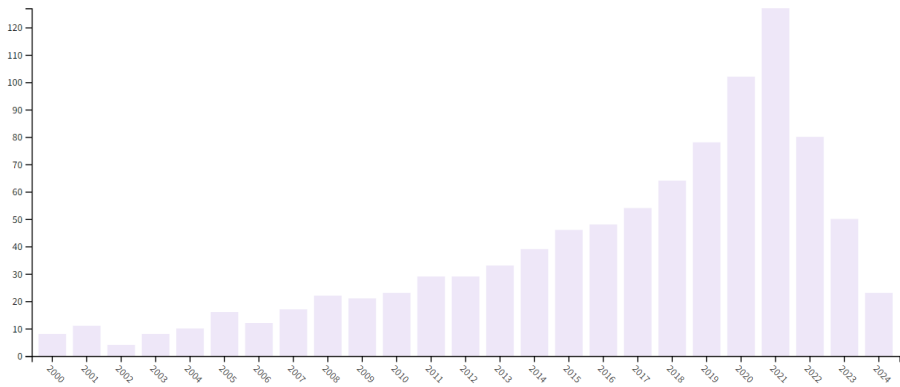
Fig. 1. Annual Trends in Purchase Decisions Published (Web of Science).

Fig. 2. The Ranking of Publications by Country in Purchasing Decisions (Web of Science).

4.3   Keywords Network Visualization and Overlay Visualization Analysis

As a refined expression of the research topic and content of academic papers, keywords can reflect the research hotspots in the subject field to a certain extent [14]. VOSviewer was applied to the exported refworks file to analyse a total of 4,766 keywords from the Web of Science database literature, with the minimum threshold set at 5, to obtain 332 sets of associations. Eliminate keywords that overlap with the topic, such as "purchase decision", "purchase intention" and " decision-making", and finally draw the co-occurrence map of keywords in the purchase decision research as shown in Figures 3, 4, and 5.
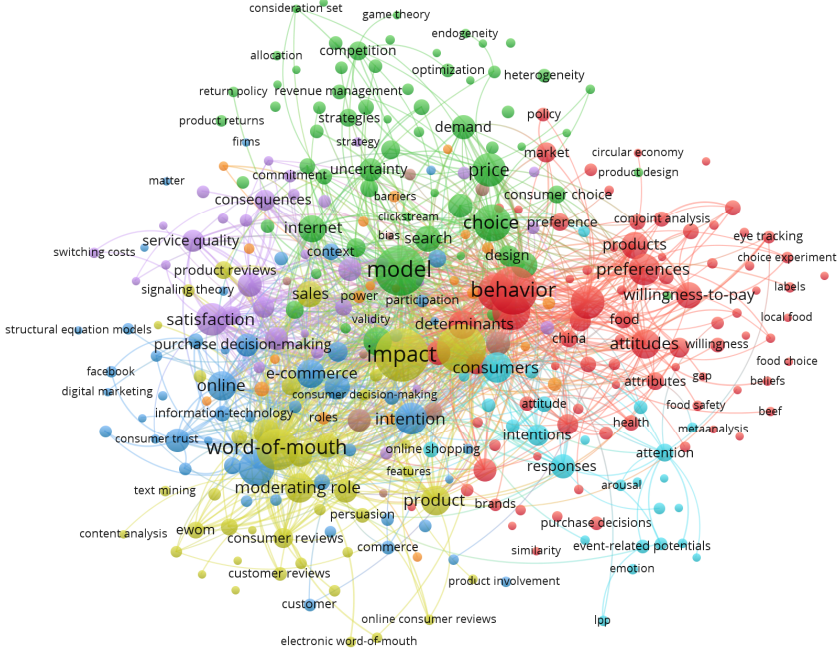
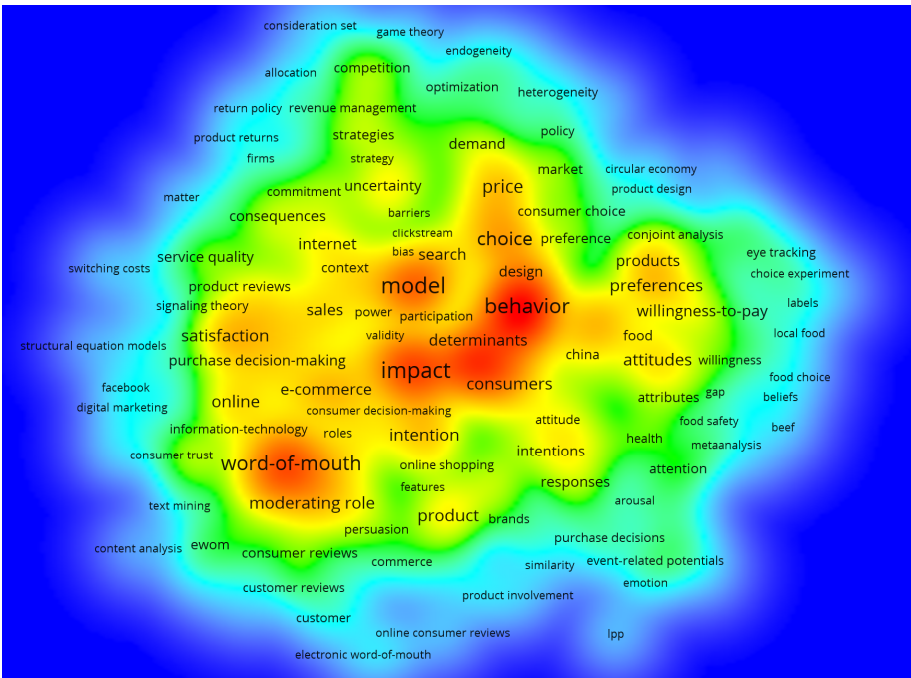**Fig. 3.** Purchase Decision Network Visualization (vosviewer).

Fig. 4. Purchase Decision Overlay Visualization (vosviewer).

As illustrated by the "items"option of VOSviewer, the research field of procurement decision-making is divided into eight distinct groups. The list of keywords was exported and the top ten with the greatest number of words in each group were analysed (Table 2).

Table 2. Key words of purchasing decision literature (Part).

label	cluster	Occs.	label	cluster	Occs.	label	cluster	Occs.
behavior	1	135	technology	3	24	attitude	6	15
perceptions	1	82	framework	3	20	online shopping	6	14
quality	1	79	context	3	16	green	6	12
consumption	1	65	impact	4	162	decision making	6	11
preferences	1	56	information	4	138	event-related potentials	6	11
attitudes	1	50	word-of-mouth	4	101	gender-differences	6	11
determinants	1	48	moderating role	4	52	media	7	13
products	1	42	product	4	51	identity	7	12
willingness-to-pay	1	39	sales	4	40	children	7	10
knowledge	1	34	social media	4	40	gender	7	10
model	2	147	communication	4	34	roles	7	10
choice	2	81	online reviews	4	32	power	7	9
price	2	64	perceived risk	4	32	barriers	7	8
experience	2	47	satisfaction	5	63	consumer attitudes	7	8
internet	2	42	antecedents	5	35	influence strategies	7	7
consumer	2	39	loyalty	5	31	recommendation	7	7
search	2	39	performance	5	31	brand	8	34
demand	2	35	service quality	5	29	reviews	8	30
risk	2	33	consequences	5	27	emotions	8	18
uncertainty	2	32	customer satisfaction	5	26	psychology	8	12
trust	3	75	perceived value	5	21	regret	8	8
intention	3	60	consumer perceptions	5	16	bias	8	5
online	3	49	corporate social responsibility	5	11	complexity	8	5
e-commerce	3	48	consumers	6	54	marketing strategy	8	5
adoption	3	36	responses	6	34	networks	8	5
social commerce	3	34	intentions	6	28	-	-	-
purchase decision-making	3	32	attention	6	20	-	-	-

Compared with the grouping and word frequency in the table, combined with the connection between the keywords in network visualization and density visualization, I have a preliminary judgment on several research directions of procurement decision, which is analyzed as follows:

(1) Cluster 1: Consumer behaviour and psychology

By using keywords such as behavior, perceptions, quality, consumption, preferences, attitudes, determinants, products, willingness-to-pay, knowledge, The literature analyzing this cluster mainly focuses on consumer behavior patterns and decision-making processes, Explore the impact of consumer attitudes and perceptions on

purchasing decisions, Analyzing consumers' acceptance of different prices and their willingness to pay, Study the level of knowledge and information access of consumers.

(2) Cluster 2: Market dynamics and economic factors

Through keywords such as model, choice, price, experience, experience, internet, consumer, search, demand, risk, uncertainty, the market dynamics and economic factors mainly focus on building and applying economic model to explain and predict consumer choice, study the influence of price change on consumer purchase decision, explore consumer decision behavior in the face of uncertainty and risk, and analyze the influence of the Internet on consumer information search and purchase decision.

(3) Cluster 3: E-commerce and technology

Through keywords such as trust, intention, online, e-commerce, adoption, social commerce, purchase decision-making, technology, framework, context, Show that, in terms of e-commerce and technology, The research mainly involves the study of consumer trust when shopping online and the process of purchasing intentions, Exploring the characteristics of e-commerce platforms and their influence on consumer purchasing behavior, Analyze consumer acceptance and use of new technologies, The decision path and influencing factors of consumers in the e-commerce environment are studied in detail.

(4) Cluster 4: Information dissemination and social influence

By using keywords such as impact, information, word-of-mouth, moderating role, product, sales, social media, communication, online reviews, perceived risk, Research on information dissemination and social impact mainly focuses on studying the transmission route of information and its impact on consumers' purchasing decisions, Analyzing the role of online reviews and consumer-perceived risk in purchasing decisions, Discuss the impact of marketing communication and product display on sales.

(5) Cluster 5: Customer satisfaction and brand effect

Through keywords such as satisfaction, antecedents, loyalty, performance, service quality, consequences, customer satisfaction, perceived value, consumer perceptions, corporate social responsibility, The research of customer satisfaction and brand effect focuses on the factors affecting customer satisfaction and their impact on repeat purchases, Explore the formation mechanism of customer loyalty and its impact on the brand, Investigate the impact of service quality and perceived value on consumer decisions, Analyze the influence of CSR behavior on consumer attitude and purchasing behavior.

(6) Cluster 6: psychological and emotional factors

By using keywords such as consumers, responses, intentions, attention, attitude, online shopping, green, decision making, event-related potentials, gender-differences, Research of psychological and emotional factors mainly involves exploring the relationship between consumer purchasing intention and actual behavior, Studying the impact of consumer attention allocation and attitude changes on purchasing decisions, Analyze consumers' attitudes and purchasing behavior towards environmentally friendly products, Study the psychological and emotional changes that consumers experience during decision-making.

(7) Cluster 7: Social role and identity

Through keywords such as media, identity, children, gender, rolls, power, barriers, consumer attitudes, influence strategies, recommendation, social role and identity research focus on the study of different social roles and gender performance and differences in purchasing decisions, explore how the identity of consumers affect their purchasing decisions, analyze the role of advertising, recommendation system and other influence strategies on consumer decisions.

(8) Cluster 8: Brand and emotional influence

The influence of brand, reviews, emotions, psychology, regret, bias, complexity, marketing strategy, networks mainly includes the influence of brand image and brand loyalty on purchasing decision, the role of emotional and psychological factors in purchasing decision, and the influence of market complexity and marketing strategy on consumer decision.

However, entries such as "elderly people" and "furniture" are far away from the research hotspots, indicating that the purchasing decision research hotspots are too dense in similar areas. The research content should try to cover multilaterally, explore the freezing point of the research area, and seek more likelihood of subject association.

4.4   Keywords Density Visualization Analysis

The keyword label network view adopts the visual effect presented by time logic. By setting the length of the timeline, as shown in Figure 5, the research hotspots in the past six years from 2014 to 2020 are presented according to the timeline.
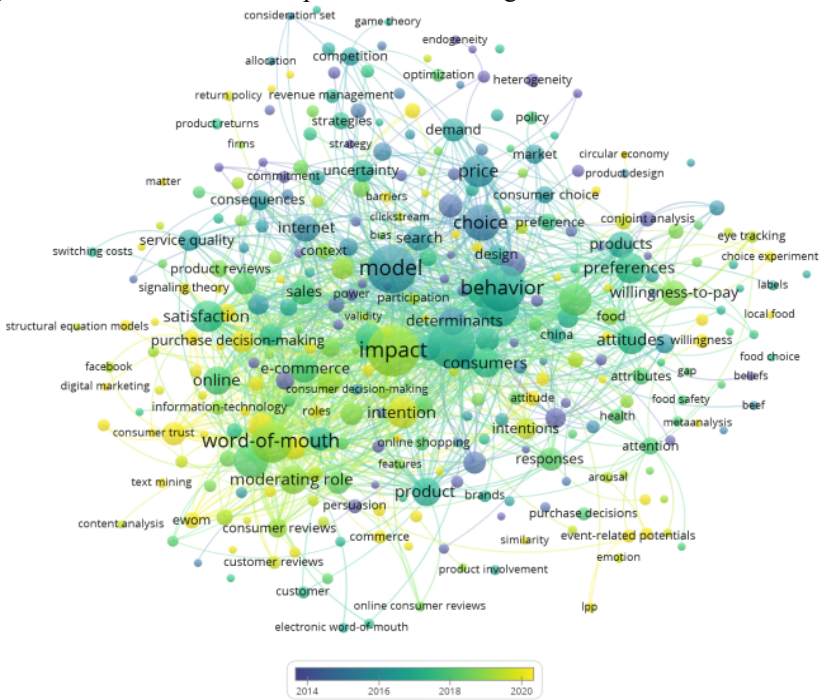
Fig. 5. Purchase Decision Density Visualization (vosviewer)

The blue hotspots in the figure are from earlier research, and the yellow hotspots are from the latest research. It can be seen from the figure that the research hotspots in the past two years include social media, green marketing, e-commerce, brand and trust, consumer behavior and Preferences, Health and Food, and Technology and Digital. These hotspots reflect the importance of consumer behavior and purchasing decisions in a changing business environment. The issue of "population aging" is not covered, and later researchers need to fill in the gaps.

5   Conclusion

Based on a comprehensive analysis of the current literature on elderly furniture purchase decisions, it is evident that while there has been significant progress in consumer behavior and decision research, there is a clear gap in the specific area of elderly users and their needs. The rapid aging of the population in Anhui Province and across China underscores the importance of understanding the unique factors that influence the purchase decisions of this demographic.

The findings suggest that trust, risk perception, product quality and marketing strategies are central to the purchasing process for consumers in general. However, the lack of focus on older consumers and their specific needs in the furniture market indicates an opportunity for researchers and industry professionals to delve deeper into this area. Older users often face challenges related to usability, functionality, and accessibility that can significantly impact their purchasing decisions.

To address these challenges, future research should emphasize the development of user-centered design methodologies tailored to the elderly population. This includes considering factors such as physical ability, cognitive function, and emotional needs. In addition, the integration of technology and smart home solutions can play a crucial role in improving the usability and safety of furniture for the elderly, which in turn can foster positive purchase intentions.

In addition, policymakers and businesses should work together to create an environment that encourages the development and adoption of age-friendly products. This includes providing incentives for companies to invest in research and development of age-friendly furniture, as well as educating consumers about the benefits of these products.

In conclusion, the study highlights the importance of understanding and addressing the needs of the elderly population in the furniture market, especially in Anhui Province. By bridging the research gap and addressing the unique requirements of this population, it is possible not only to improve the quality of life for seniors, but also to tap into the lucrative "silver hair" market, thereby promoting economic growth and social welfare. Future research should continue to explore the interplay between product design, user experience, and purchase decisions with a specific focus on the elderly population to drive innovation and enhance market competitiveness in this sector.

Based on a comprehensive analysis of the purchasing decisions of elderly furniture the Government could consider providing tax incentives to enterprises engaged in the

research, development and production of age-friendly furniture products. Such incentives could encourage enterprises to increase their investment in the elderly market, improve product quality, and promote better satisfaction of the needs of elderly users. At the same time, special funds could be set up to provide research and development subsidies to enterprises dedicated to the development of age-friendly furniture products. Such a policy will help reduce R&D costs and encourage more enterprises to engage in related research and innovation. Further increase the government to provide technology transfer support to help enterprises apply advanced scientific and technological achievements to the development of age-friendly furniture products, in order to enhance the level of product intelligence and safety.

Through the implementation of the above policies, the R&D and promotion of age-friendly furniture products can be effectively promoted to meet the growing needs of the elderly population, and at the same time lay a solid foundation for enterprise innovation and market competitiveness.

Acknowledgments

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