MODELLING CHINESE CONSUMERS IN GREEN-VALUE-ATTITUDE ENHANCING NEW FIRST-TIER CITIES' FURNITURE CONSUMPTION MARKET

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ABSTRACT

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Furniture has become a necessity to improve the quality of life for today's consumers. With customer's increasing environmental and health consciousness, green furniture products which are more friendly to the environment and less harmful to consumers' physical health are becoming mainstream worldwide gradually. In the People's Republic of China (PRC), the world's second-largest economy, there is an increasing demand for green furniture products in recent decades as well.

Ultimately, the concept of consumer value, its effects on attitude and consumption behaviors, and the effects of Chinese consumer's demographic attributes on various consumer value factors are critical to the research on green furniture products marketing. There are only a few research conducted on the new first-tier cities market in the PRC while most studies are focused on Western developed countries or PRC's first-tier big cities. On fact these new first-tier cities represent the rise of China's emerging cities in the future. From the standpoint of product categories, research on consumer perceptions or behaviors toward specific green furniture has been limited. Little research is designed to explore a comprehensive set of more contemporary customer value systems, particularly, from an internal personnel qualitative analysis perspective in the furniture industry. Few studies link Chinese consumers' demographic

attributes with consumers' values to the overall attitude and consumption behaviors toward green furniture products. In addition, there is an argument on attitude's mediating role between customer values and their consumption behaviors in previous studies. To address these gaps, considerable attention and academic contributions should be devoted to green furniture consumption in PRC's new first-tier market.

To scope down the aforementioned gaps, particularly, research objectives are set up for this study: 1) To investigate the demographic characteristics (city, gender, age group, education level, income, marriage status, organization to buy) of Chinese consumers who purchase green furniture; 2) To study Green Chinese values (product value, personal value, eco-friendly system value), attitudes (cognitive, affective, conative), and to examine the value factors that influence Chinese consumer's consumption behavior (willingness to buy, willingness to recommend, willingness to re-purchase green furniture); 3) To analyze the mediating role of attitude (cognitive, affective, conative) in the relationship between Green Chinese values (product value, personal value, eco-friendly system value) and consumption behavior (willingness to buy, willingness to recommend and willingness to re-purchase green furniture); 4) To present and develop the Chinese consumer's value-attitude causal model which enhances its green furniture consumption behavior in the new first-tier cities' Chinese market. This study develops hypotheses regarding the relationships among Chinese consumers' demographic profiles, values, attitudes, and green consumption behavior. The quantitative research that employed the instrument was a questionnaire. After the data collection from four major Chinese new first-tier cities（Chengdu, Hangzhou, Xi'an, and Wuhan), 832 questionnaires were collected and used for data analysis. The target samples were consumers aged 15 years and up who have experience in purchasing green furniture products in PRC's four new first-tier cities. Confirmatory factor analysis (CFA), multiple linear regression analysis, path analysis, and structural equation modeling

(SEM) were conducted to test hypotheses using SPSS version 23.0 and AMOS version 22.0.

The result of this study confirmed the different demographic backgrounds of PRC consumers play a role in the green furniture consumption process, consumers from Hangzhou and Wuhan, married couples with children, and consumers with high incomes as 7,001 yuan and up are some significant consumer groups that marketers should pay special attention when implement segmentation strategy. This study also identified significant consumer values and examined the extent level of these value factors impact Chinese consumers' attitudes and consumption behavior. The study's results showed that 6 out of 7 hypotheses are supported, and one hypothesis is rejected. "Product value" (β= 0.605*) and "eco-friendly system" value (β= 0.056*) had a positive effect on "attitude". "Attitude" had a positive influence on "consumption behavior" (β= 0.654*). Furthermore, "product value" (β= 0.817*), "personal value" (β= 0.160*), and "eco-friendly system" value (β= 0.516*) significantly positively affect "consumption behavior". Chinese consumers' "attitude" as the mediator: Chinese consumers' "green consumption behavior" was positively impacted by product value (β= 0.056*) and "eco-friendly system" value (β= 0.027*). Finally, there is no empirical evidence found that "personal value" had a positive effect on "attitude" in this study.

From an academic perspective, this study adds to the current knowledge of Chinese consumer demand in terms of green furniture consumption in the new first-tier cities market and broadens on previous theories such as attitude-behavior hierarchy, consumption value, and theory of planned behavior (TPB) theory. Particularly, this study contributes to the development of the Chinese consumer's value-attitude causal model which enhances its green furniture consumption behavior.

From a practical perspective, the CEO of green furniture enterprises and marketing manager can understand PRC consumers' multidimensional green furniture consumer value and which types of values can influence consumers'

attitudes and consumption behavior toward green furniture products. This understanding allows the CEO of green furniture enterprises and marketing managers to allocate their limited resources appropriately. The CEO of green furniture enterprises and marketing manager can also strategically decide on managing and consequently enhancing the effectiveness of the green furniture value that they offer.

Based on the results of this study, the strategic recommendations for Chinese consumers are accumulating a positive attitude, cultivating green furniture consumption lifestyles, and improving consumption capability. For enterprises, enhancing the functional, health, and service value of green furniture products, particularly for parents and high-income consumers, while stressing the importance of market segmentation based on different demographic characteristics. For government organizations, enhancing the dissemination of knowledge about green furniture products, promoting the use of new technologies, cooperating with various organizations and institutions, and implementing nationally authoritative green furniture certification and green label systems are important.

Keywords: Green Furniture, Consumer Values, Attitude, Green Consumption Behavior, Demographic Profile, PRC New First-Tier Cities

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CHAPTER 1

Introduction

Statement of the problem

Nowadays, furniture has become a pathway in people's daily lives and is seen as a good way to improve their quality of life (Wu, 2006). Customers at present time are concerned about the environment and health issues globally which lead to great attention has been paid to green furniture products (Xu, Wang & Yu, 2020) and this trend also creates increasing demand for them (Shahsavar, Kubeš & Baran, 2020; Chai, Wang & Chen, 2020; Wu, 2022). Grand View Research reported that the total worldwide green furniture market value exceeded $ 36.9 billion in the year 2020 and continues to expand at a substantial compound annual growth rate (CAGR) of approximately 6.8% (Eco-friendly furniture market analysis report, 2019). If use of this number, the total worldwide investment in green furniture will likely reach $ 59.82 billion dollars in the year 2027. In the People's Republic of China (PRC), the world's second-largest economy, less environmentally harmful green furniture products that are beneficial to health and the natural environment, are normally considered as comfortable and safe to use products, these images and attributes of green furniture gradually become a prominent part of Chinese consumer's life in recent years (Li, Xu, Wang & Wang, 2018). The green furniture sector in the PRC is expected to reach $10.5 billion by 2027, growing at 8.5% CAGR (Eco-friendly furniture - global market trajectory & analytics, 2021). Many previous research has shown that PRC has an increasing demand for green furniture in recent decades (Guoyou, Saixing, Chiming, Haitao & Hailiang, 2013; Wan, Zhang & Ye, 2018; Zhang, Zhu, Wang, Reng & Yan, 2022).

As customers' environmental consciousness rises, consumers nowadays are more concerned about the future and quality of life on the earth than previous generations, and they are more likely to choose green products and embrace green consumption behaviors (Kilbourne & Pickett, 2008; Rex & Baumann,

2007; Khan & Mohsin, 2017; Joshi & Rahman, 2019; Xu, Wang, Yu, 2020). A recent study by Cheah & Aigbogun (2022) indicated that consumer's consumption patterns account for approximately 40% of environmental challenges. Enhancing green consumption has been proven to be an effective approach to address today's environmental and resource challenges (Tavares, 2021). Consumer behaviorists also believe that customer's attitude can predict their consumption patterns and behaviors (Zhao, Gao, Wu, Wang, & Zhu, 2014). Another group of scholars further indicated that attitude mediates between customer value and their consumption behavior value (Sparks & Shepherd, 2002; Kim & Chung, 2011; Im, Bhat & Lee, 2015).

Consumer choice is a function of several consumption values, and that a decision can be influenced and made by any or all of these values. Lee, Levy & Yap (2015) cite Sheth, Newman & Gross (1991) "Consumption values define five types of consumption values: functional value, social value, emotional value, epistemic value, and conditional value". There is some evidence suggesting that consumption values can influence consumption behaviors. According to Lin & Huang (2012) and Gonçalves, Lourenço & Silva (2016), green purchasing behaviors are enhanced by the integration of functional, emotional, social, conditional, and epistemic value. Choe & Kim (2018) explored the influence of consumption value on Hong Kong's local food for foreign tourists and found that tourists' attitudes toward local food and behavioral intentions are well explained by tourists' local food consumption value. Green consumption behavior has been associated with personal values and product types. It has been discovered that altruistic and bio-spheric consumers may be inspired to enjoy pro-environmental consumption values, whereas egoistic consumers may be empowered to enjoy self-centered consumption values (Sivapalan, von der Heidt, Scherrer & Sorwar, 2021). Besides traditional consumption values, environment, health, service, and technology are also found as important value factors to have effects on consumption behaviors of green products in recent studies. Khan & Mohsin (2017)'s study conducted in Pakistan revealed that environmental value has a

significant and positive impact on green customers' product purchasing behavior.

In addition, today's consumers are not only concerned about the impact of their consumption behavior on the environment but are also increasingly concerned about the influence on their own and their families' health. Physical health is becoming a crucial consideration when the purchase decision is made on green products and has a positive and significant impact on consumption behavior (Smith & Paladino, 2010; Liu, Mason, Guo, Krebs & Roache, 2015; Ghazali, Soon, Mutum & Nguyen, 2017; Xu, Hua, Wang & Xu, 2020) because consumers are afraid of the toxic chemicals will harm their health. In addition, service value was also viewed as an important value factor that can impact consumers' consumption behavior on green products choice. Service has a significant impact on the organization throughout all aspects of its consumers of communication. Not only is the service important for departments that have direct contact with customers (e.g. sales, and customer service departments), though, has a significant impact on building brand reputation, brand image, and loyalty (Chao, 2020). Particularly in today's new media environment that information spreads quickly. Kotler, Keller, Brady, Goodman & Hansen (2019) pointed out that customers are the center of all business activities, they tend to communicate and interact, and they are service-oriented.

Furthermore, the emergence of new technology applications in green products creates new market opportunities and influences customer decision-making nowadays (Friedman & Hendry, 2019; Furniture global market report, 2022).

Traditionally, four well-known PRC's first-tier megacities notably Beijing, Shanghai, Guangzhou, and Shenzhen play crucial roles in political, social, and economic activities (Li, Long & Chen, 2018). However, it is reasonable for a big country with a large population, such as the PRC, to have several central cities located in different regions (Arshad, Hu & Ashraf, 2018). New first-tier cities concept was proposed in this context. These cities with increasing importance as they are considered with the greatest potential to become new metropolise

centers in the near future. There are only a few research focused on a new first-tier cities market in PRC while most studies are conducted in Western developed countries. From the standpoint of product categories, the bulk of studies focus on general green products, organic food, eco-tourism, and green clothing are some popular products in the research field. Research on consumer perceptions or behaviors toward specific green furniture has been limited. Despite the fact that market participants and academics have recognized the importance of green products, consumers will not buy a product or service because of its green attributes alone. Therefore, examining a comprehensive set of significant customer values toward green furniture consumption has become crucial for today's enterprises, policymakers, and consumers. Existing studies mostly lack empirical research in modern PRC customer value systems, particularly, from internal personnel qualitative and analytical perspectives in the furniture industry. The considerable impacts of some values, such as awareness of green furniture, service value, and technology value on attitude have not been examined extensively in previous studies (Le-Anh & Nguyen-To, 2020). Although some earlier researchers showed that consumer attitudes can predict consumption behavior (Zhao, Gao, Wu, Wang & Zhu, 2014), some researchers contended a gap is existed between purchasing attitudes and their consumption. As a result, customers frequently fail to transform their attitudes into actual behaviors (Auger & Devinney 2007; Young, Hwang, McDonald & Oates, 2010). The current study attempts to validate this attitude-behavior gap in green furniture products practice in PRC's first-tier cities market. To address these knowledge gaps in academia and create long-term benefits for the furniture industry, consumers, and environment, a deeper grasp of the green Chinese value-attitude model to enhance the furniture consumption market in new first-tier cities is needed.

Research objectives

Below are the pertaining objectives of the current study:

1) To investigate demographic characteristics (city, gender, age group, education

level, income, marriage status, organization to buy) of Chinese consumers who purchase green furniture.

2) To study Green Chinese values (product value, personal value, eco-friendly system value), attitudes (cognitive, affective, conative), and to examine the value factors that influence Chinese consumer's consumption behavior (willingness to buy, willingness to recommend, willingness to re-purchase green furniture).

3) To analyze the mediating role of attitude (cognitive, affective, conative) in the relationship between Green Chinese values (product value, personal value, eco-friendly system value) and to consumption behavior (willingness to buy, willingness to recommend, and willingness to re-purchase green furniture).

4) To present and develop the Chinese consumer's value-attitude causal model which enhances its green furniture consumption behavior in the new first-tier cities' Chinese market.

Research questions

The following questions are set as guidelines to fulfill research objectives.

1) What are the demographic characteristics of Chinese consumers who purchase green furniture in the new first-tier cities Chinese market?

2) What are Green Chinese identified values (product value, personal value, eco-friendly system value) and attitude (cognitive, affective, conative)? And to what extent do green Chinese value factors influence on consumption behavior (willingness to buy, willingness to recommend, willingness to re-purchase green furniture)?

3) Do attitudes (cognitive, affective, conative) facilitate variables between Green Chinese values and their consumption behavior?

4) What is the causal model development of Chinese consumers' value-attitude enhancing green furniture consumption in the new first-tier cities' Chinese market?

Backgrounds of the study

Over the last half-century, human consumption of natural resources has surpassed that of all preceding eras combined. The excessive consumption of

resources and the low environmental awareness of consumers in the past few decades have gradually led to some environmental problems, for example, 9 out of 10 people breathe polluted air, 500 billion to 1 trillion plastic bags are landfilled each year worldwide, and a plastic bag taking up to 1,000 years to decompose. These environmental issues have made consumers increasingly concerned about the green and sustainable attributes of products. At the same time, the green product market has also developed rapidly in recent years. According to a study of 60 countries worldwide in 2015, 73% of consumers are willing to pay a higher price for green products (Das, 2023). According to the Organization for Economic Cooperation and Development (OECD, 2009), green products reflect what is achieved to prevent, limit, reduce, or correct harmful environmental impacts on water, air, and soil; they constitute at least one means of resolving problems related to waste, noise, and general detriment to the ecology. Green products, including green furniture, can bring various benefits to the natural environment, society, businesses, and consumers. These benefits include: 1) Environmental benefits. Green furniture is made from organic and biodegradable materials, with the aim of using the least number of non-renewable resources and toxic chemicals to produce them. This helps reduce greenhouse gas emissions and prevents environmental pollution and climate change. The longer lifespan of green furniture means that it will not become waste and further pollute the environment in the short term. Additionally, green furniture reduces the threat of excessive resource use and encourages the utilization of natural resources for production. 2) Social benefits. Green products create more job opportunities. According to research by the International Renewable Energy Agency (IRENA), the renewable energy industry created nearly 500,000 new job opportunities in 2017, an increase of 5.3% from 2016. It is predicted that this number will increase to 16 million by 2030 if the demand for green products continues to grow (Das, 2023). Therefore, with the development of green products, not only the environment but also the economic condition will improve. 3) Business benefits. As there are already consumers in

the market who are inclined to buy or only buy green furniture, businesses can access a new market of green consumers by developing green furniture products. Moreover, in the current market environment, the green attributes of a product can increase its competitive advantage and contribute to improving the brand's public image. Additionally, companies that produce green products can attract loyal customers who prefer environmentally friendly options over traditional non-eco-friendly products. 4) Consumer benefits. In the long term, green furniture is cost-effective products that help consumers save money due to its minimal use of resources and energy and have a longer lifespan. Furthermore, since green furniture is made from materials that do not contain harmful chemicals, it often improves consumers' physical and mental health. All of these reasons, along with the attributes that conventional furniture lacks, make green furniture increasingly important in today's consumer market.

Current furniture market situation in China

Furniture has become one of the most important components in the consumer's daily life and is considered to be a good way to improve the quality of life (Wu, 2022). As a labor-intensive industry, it has also been beneficial to the society by providing a large number of jobs. There has been a growing home decoration and furniture spending all over the world in recent years. A report from research and markets showed that the global furniture market was worth 637.26 billion US dollars in 2021, and it is leading increase to 945.53 billion US dollars from 2022 to 2030 (research and markets, 2022). The market size of the Asia-Pacific region generated over 270 billion US dollars in 2020 which was the world's fastest-growing furniture market (Mordor intelligence, 2021a). One of the leading furniture markets in the Asia-Pacific region is the People's Republic of China (PRC). PRC's furniture market size was valued at 68.3 billion US dollars in 2020 and is predicted to reach 114.4 billion US dollars by 2028, growing at a CAGR of 6.7% from 2021 to 2028 (Verified Market Research, 2022). Many Chinese people stay indoors for more than 85% time of the day (Xu, Wang & Yu, 2020) which makes Chinese consumers have the big

motivations to invest in home decoration (Wan & Toppinen, 2016). When looking at sales channels, Chinese consumer traditionally prefers to buy furniture through offline physical shops due to they want to touch, feel, and have a try on the furniture products. However, the sudden COVID-19 pandemic has changed the pattern of the furniture market to some extent, and consumers increasingly prefer to purchase furniture products through online channels. Buying furniture online is becoming a significant trend in the PRC, furniture sales by online channels climbed from 54-58% during 2018-2019 (Fortune Business Insights, 2022). Consumer's online shopping experience comes with new technologies: computer-generated imagery (CGI) and augmented reality (AR) (The Business Research Company, 2022). As consumers spend more time at home during the COVID-19 pandemic period, they start to improve their living space to make it more comfortable when working from home which led to furniture, especially for home office furniture sales increased (Mordor intelligence, 2021b). PRC furniture industry also ranks as the world's largest producers and exporters. The furniture production industry reached 420 billion US dollars in 2017, while the PRC alone accounts for approximately 40% of global output (Center for Industrial Studies, 2017) prevailing PRC is the world's biggest manufacturer of furniture products (Xiong, Ma, Wu & Zhang, 2020). PRC's furniture exports were 89,500,005,000 US dollars (2016), representing for 38.2% of global furniture exports (Export genius, 2017). Despite the rapid growth in the scale of the Chinese furniture industry, the environmental problem in the industry is becoming serious and about 111 thousand people die of interior furnish each year (Xu, Wang & Yu, 2020). That makes consumers pay more and more attention to green furniture which takes environmental factors into consideration in the stages of the furniture lifecycle to minimize its negative impact on the environment and human health. Compared with traditional furniture, green furniture is more environmentally friendly and good for human health and well-being. The most common furniture styles are made of panels and steel wooden structures. Wood furniture took up 40% of PRC’s furniture exports,

and the European Union is also importing wood furniture as their main import furniture category, representing about 75% of the total furniture imports in 2000 (Wan & Toppinen, 2016; Searce, 2002). Therefore, the furniture industry is closely related to the rational utilization of natural forest resources. Customers' rising environment and physical health consciousness led to a growing demand for green furniture in the PRC (Cai, Xie & Aguilar, 2017). Green furniture or eco-friendly furniture refers to furniture products designed to reduce environmental damage and influence consumers' physical health during the product life cycle stages (Eneizan, Abd Wahab & Obaid, 2016). The green furniture output in the PRC is expected to reach 10.5 billion US dollars by the year 2027, an approximately 8.5% CAGR over the analysis period 2020 to 2027 (Research and Markets, 2021). According to a report from Hong Kong Trade Development Council survey (HKTDC, 2020), more than 90% of respondents in the PRC have been eager to purchase green furniture (Xu, Wang & Yu, 2020). In particular, approximately 90% of parents consider eco-friendliness to be the most important reason for purchasing furniture, and more than 77% are worried that non-eco-friendly furniture may harm their children's physical health (Xu, Wang & Yu, 2020).

There are some emerging cities that are showing huge potential to become the PRC's regional center and metropolitan cities in the future except current well-known megacities, Beijing, Guangzhou, Shanghai, and Shenzhen. It observes that there is an increasing attractiveness of these emerging cities. The concept of new first-tier cities was first proposed in this context by the Yicai media group in 2013. Yicai media evaluate 337 prefecture-level cities in the PRC, according to the measurement of the average weighted assessment indicating lifestyle diversity (0.15), future plasticity (0.15), urban population activity (0.21), urban hub (0.23), and business resource concentration (0.26) evaluating the best Chinese cities (Yi, Li & Zhang, 2021). Business resource concentration is a data indicator that assesses the economic strength of a city. It measures a city's commercial prosperity in terms of the preferred brand: the shopping power

district and the underlying commercial development. The urban hub has four secondary components: intercity transportation infrastructure index, transport connection, logistics access, and the regional centrality of commercial resources index. The modern commercial civilization of cities has its origins in the various demands that arise from people's interaction and use of urban resources. Urban population activity is a data collection on the behavior of citizen internet users. Behind the different consumption preferences and characteristics of different cities is the fact that there are a thousand leisure options for a thousand people. Lifestyle diversity looks at the various types of leisure based on the diverse needs of city dwellers. It measures the behavioral performance of urbanites in terms of leisure, recreation, and consumption. Future plasticity refers to a city's ability to deal with risks and maintain healthy development in a rapidly changing environment, which includes a strong industrial innovation climate, a continuous inflow of talent, a continuous consumption potential, and a reasonable increase in city size (Accesspath, 2022). Since the initial assessment of new first-tier cities in 2013, Chengdu has consistently been placed first. Other cities on the list, such as Hangzhou, Chongqing, Wuhan, Xi'an, and Suzhou, have maintained a generally constant position despite slight changes in the ranking order.

Urbanization, preferential policies of local governments, and convenient transportation contribute to the attractiveness of these new first-tier cities. Urbanization has been an essential part of the PRC's urban development in the last 70 years. PRC has moved fast urbanization, with the urbanization rate rising from 10.64% (1949) to 59.58% (2018). PRC, like the rest of the globe, is dealing with low birth rates, slow population growth, and an aging population society. To boost birth rates, after the one-child restriction was relaxed in October 2015, 17.9 million infants were born in 2016, yet this was barely half of the birth rate that had been expected. The birth rate dropped to 17.2 million in 2017, out of the government prediction of more than 20 million (NDTV, 2018). In this context, the population, particularly young talent, was seen as the most essential resource for urban development. Numerous local city governments have started to offer

broader preferential policies to attract talent. Take the Wuhan government as an example, it attracted fresh graduates due to its affordable rentals and favorable government policies. The city plans to build approximately 2.5 million square meters of affordable housing aimed at university graduates. Graduates wishing to rent will be offered a 20% discount off the market price. And it even temporary exemptions for those with doctoral and master's degrees. All these measurements led to a total of 345,200 university graduates choosing to stay and work in Wuhan last year, up by 14.3% from 2020 (Zhou & Xu, 2022). Chengdu is the third city in mainland China to operate a "dual airport" operation after Shanghai and Beijing. It is a comprehensive transportation hub in the southwest region of the PRC, which currently has four railway stations. Chengdu's transportation hub status will be expanded significantly in the future (Thepaper, 2022).

The increased attractiveness of these first-tier cities in turn causes population growth. There is a trend that the population is flowing out from first-tier cities and started to flow into new first-tier cities in recent years due to reasons such as escalating housing prices, difficult job hunting, high cost and pressure of living, and far distance from their hometown in these traditional large cities. This phenomenon was called “to flee BSG”. BSG stands for “Beijing, Shanghai, and Guangzhou”, the three largest cities in the PRC. Over the last decade, population growth in Xi'an, Zhengzhou, and Changsha has exceeded 40%. In addition, Wuhan, Hefei, Nanchang, and Taiyuan have also attracted lots of talent to work and live in these cities (Wu, 2022). The ZiRu Research Institute gets similar results by analyzing the rental preferences of more than 1.5 million fresh graduates in 2020, 2021, and 2022. According to recent population movement data, although Beijing and Shanghai remain the dream destinations for graduates, new first-tier cities such as Chengdu have become their “new choices” (Guo, 2022). The proportion of new graduates preferring to work in new first-tier cities has continuously peaked, reaching 27% in 2021. In contrast, the proportion of graduates who chose to work in first-tier cities dropped from 22% in 2017 to 18% in 2021 (Qin, 2022). The top four cities in terms of citizen

population increase are all new first-tier cities, ranked as Wuhan, Chengdu, Hangzhou, and Xi'an, with rising population of 120.12 million, 24.5 million, 23.9 million, and 20.3 million respectively (Lin, 2022). Take Chengdu as an example, Chengdu is the fourth most attractive city in the PRC after Chongqing, Shanghai, and Beijing, with a resident population of 21.912 million at the end of 2021, an increase of 2,542,000 when compared to 2020. Wuhan, with a population of 13.649 million, is the third largest provincial capital city in terms of resident population in 2021, with an increase of a new population of over 1,212,200 in 2021. In PRC's new first-tier cities, besides Chengdu and Wuhan, Xi'an is the largest city in the Northwest of the PRC, having a resident population of 13.163 million at the end of 2021 which reached 13 million population for the first time, a 203,000 gain over the previous year's end. Zhengzhou and Hangzhou are fifth and sixth in the 12 million tiers respectively, while Shijiazhuang and Changsha remain seventh and eighth (Lin, 2022). Most of the above-mentioned cities are on the list of new first-tier cities.

Literature review

Growing public concern about environmental and health issues opens up several chances for expansion in the green product sector. Green products, including green furniture, are becoming a global trend, driven by customers, inspired by the government, and applied by industrial players (Jakob & Edenhofer, 2014).

Previous research has found that consumers make purchasing decisions based on their judgments of the values of products or services (Graf & Maas, 2008; Chen & Laksitamas, 2022). Since then, this concept has caught the curiosity of researchers (Sánchez-Fernández & Iniesta-Bonillo, 2007). Because of rising consumer demand, marketing focus is continually looking for strategies to maintain a competitive edge. Communicating and delivering value to customers may be a source of sustainable competitive advantage, placing a company in a far stronger long-term position and substantially contributing to profit (Gallarza & Gil Saura, 2006; Lee & Min, 2013; Baoguo & Laksitamas,

2020). Through identifying the relationship between products and consumer values is especially important for strategic marketing management (Long & Schiffman, 2000; Spiteri & Dion, 2004). Marketing managers must devote extra effort to determine what kind of consumers desire (Sweeney & Soutar, 2001) between customers' value of what these customers truly want and what the organization can provide. The organization may face challenges and risks in marketing endeavors if they fail to do this. After reviewing the extensive literature, the use of the term "value" is varied inconsistent meaningful (Choe & Kim, 2018).

According to Han, Wang, Zhao, and Li (2017), functional value has impacted on consumers' intentions to purchase electric vehicles functionally. Health factor is also considered as one of the important determinants when consumers make a consumption decision. Several research projects have attempted to explain the health value through physical health concerns, which are defined as consumers' consciousness of their families and their health (Yadav & Pathak, 2016). The factor of physical health concerns was found to have a lush impact on consumers' purchase intentions for authentic green furniture products in the PRC (Xu, Hua, Wang & Xu, 2020). This implies that customers are worried about the negative impact of poisonous chemicals on the furniture.

Consumers may obtain a type of value from the service. Service value refers to an objective or subjective benefit appreciated exclusively by the beneficiary from a service. It reflects the emphasis on the role of various service components in shaping consumers' value judgments (Ruiz, Gremler, Washburn & Carrión, 2008). Kotler, Keller, Brady, Goodman & Hansen (2019) pointed out that customers prefer to interact and communicate, they are service-oriented and as the center of various businesses today. Service quality has a significant effect on customer satisfaction and also on their purchase intention toward green products, implying that the better the quality of service, the greater the customer satisfaction and behavioral intentions (Hsu, Huang, Hsu & Huang, 2016).

Epistemic value is the perceived utility gained from an alternative's

choices to spark interest, generate novelty, and/or satisfy demand for epistemic knowledge (Lee, Levy & Yap, 2015). Epistemic value is concerned with determining customer desires for information and novelty experience. Rahnama and Rajabpour (2017) revealed that the epistemic value had a significant favorable effect on green product selection in Iran and that epistemic value is one of the most important elements in consumers' green product selection behavior.

Emotional value is perceived usability that customers are satisfied with eliciting feelings and affective states (Lee, Levy & Yap, 2015). Emotional value is measured by how consumers feel about products. When going to promote green products in emerging markets, emotional value is a crucial element to consider when purchasing (Khan & Mohsin, 2017). The emotional value of green products has a strong positive influence on customer choosing behavior (Lin & Huang, 2012). Consumers who are becoming green can help to protect the environment and have a positive feeling about doing it are more likely to act for themselves and also society as a whole.

The perceived utility deriving from the product or service connection with one or even more social groups, – for example, demographic, socioeconomic, and cultural groupings, is known as the social value (Lee, Levy & Yap, 2015). The social value is associated with acceptance and approval of self-image improvement on the green customer’s behavior (Sweeney & Soutar, 2001; Finch, 2006). According to Gonçalves, Lourenço & Silva (2016) research, social value has a positive impact on green product buying behavior in Portuguese marketplaces.

Environmental value or environmental consciousness relates to whether or not customers are aware of environmental issues and the effort they are willing to address those problems (Wang, Fan, Zhao, Yang, & Fu, 2016). In India, environmental value has been demonstrated positive impact on environmentally friendly consumer behavior (Biswas & Roy, 2015). The research evidence of Xu, Wang, and Yu (2020) also revealed that environmental awareness influences

customer attitudes and willingness to pay, as well as consumer intentions to acquire green furniture.

User technology has an agreeable impact on consumer purchase decisions (Poushneh & Vasquez-Parraga, 2017). The concept of technology value describes as consumer's perceived and actual benefits generated by the use of technology (Khosrow-Pour, 2005). The demand for technology is increasing with its rapid development and customers have expressed strong intentions to use new technologies such as mobile applications, augmented reality (AR), and big data in various industries (Rivera, Gregory & Cobos, 2015). Take AR for example, customers can use AR mobile applications to display a virtual 3D model of furniture live, as well as view the furniture from all angles and orientations. Poushneh and Vasquez-Parraga (2017) reported in their research on virtual objects as well as the information provided by AR can increase user satisfaction and then further lead to the increasing willingness to purchase behaviors.

In addition to consumer values mentioned above, attitudes have also been found to be related to consumer consumption behavior by many previous scholars (Seyed & Mahnoosh, 2012). Attitude is an enduring psychological tendency toward to certain objective (people, ideas, emotions, products, or events., etc.) (Kim, Hall & Kim, 2020). This psychological tendency encompasses the subjective appraisal of the individual and may result in behavioral tendencies. This research will analyze its relationship with values and consumption behavior by focusing on three dimensions: cognitive, affective, and conative. And Chinese consumers' green consumption behavior will be looked at from three dimensions: willingness to buy, willingness to recommend, and willingness to repurchase green furniture products to further evaluate Chinese consumers' loyalty level toward green furniture products.

Research conceptual framework

This current research aims to identify the key Green Chinese values (product value, personal value, eco-friendly system value) that are affected by

Chinese consumers' consumption behavior toward green furniture in the new first-tier cities' market. This core concept is developed based on three underlying theories: the extended value-attitude-behavior hierarchy model proposed by Cheung & To (2019), the consumption value theory developed by Sheth (1991) and examined by Lee, Levy & Yap (2015), and the theory of planned behavior (TPB) as initiated by Ajzen (2015). The four components of the author's framework are based on: cognitive, affective, conative of Green Chinese values choices and attitudes, and Chinese consumer's consumption behavior. The suggested conceptual framework is believing customers follow a sensible flow from consumer values to intermediate attitudes to individual consumption behaviors. This value-attitude-behavior process in customers' minds (cognitive, affective, and conative) includes the search and processing of information as mentioned by the TPB (attitude, subject norms, and perceived behavioral control) and the consumption value theory (functional value, social value, emotional value, epistemic value, and conditional value), both of which have an impact on consumer choice behavior. TPB is a powerful model for explaining consumer's pro-environmental behavior (Ru, Qin & Wang, 2019). Therefore, it is appropriate to select one of the basic theoretical models in this research. Cheung & To (2019) indicate that consumer values are significant in forming environmental attitudes, which in turn results in eco-friendly behavior. These theories serve as the foundation for the suggested conceptual framework. Following an exhaustive examination of the literature on green products studies, it was decided to consider the following constructs that influence Chinese consumers' attitudes, and consumption behavior toward green furniture in PRC's new first-tier cities market: product value, personal value, and eco-friendly system value. Product value comprises items related to functional, health, and service values. Personal value and eco-friendly system value comprised items related to epistemology and emotional values, and social, environmental, and technology values separately. The research conceptual framework and relevant hypothesis are developed in Figure 1. as the framework Modelling Green

Chinese Value-Attitude Enhancing New First-tier Cities' Furniture Consumption Market has portrayed empirically based study: (Khan & Mohsin, 2017; Choe & Kim, 2018; Yu & Lee, 2019; Xu, Hua, Wang & Xu, 2020; Wang, Shen & Chu, 2021; Sivapalan, von der Heidt, Scherrer & Sorwar, 2021). Below are specific references used in the research framework.

The demographic was found as an important factor affecting consumers' eco-friendly behavior. Shahsavar, Kubeš & Baran (2020) conducted research to measure consumers' social demographics to forecast their purchasing behavior on green furniture in the capital Prague (Czech Republic), and their findings showed that some demographic factors such as gender, age, education, and marital status) play a role in eco-friendly furniture's purchasing behavior. Value is also a significant antecedent of consumer consumption behavior. There are several values were found have positive influence on consumer's green consumption behavior in previous research, such as functional value which is described as the perceived benefits for functionality or physical condition (Han, Wang, Zhao & Li, 2017), health value which described as consumer's consciousness on themselves or on their family members (Xu, Hua, Wang & Xu, 2020), service value which refer to benefit customer obtained from a service (Kotler, Keller, Brady, Goodman & Hansen, 2019), epistemic value which is defined as the perceived usefulness derived from an alternative ability to stimulate interest, create novelty, and satisfy a demand for knowledge (Rahnama & Rajabpour, 2017), emotional value which is defined as the perceived benefit that evoke customers' feeling or affective responses on a product or service (Khan & Mohsin, 2017; Lin & Huang, 2012), social value which indicate the benefit achieved from one or more several social groups (Gonçalves, Lourenço & Silva, 2016), environmental value describing as whether a customer has recognize the environment problems and what extent they can put the effort on it to resolve these problems (Biswas, & Roy, 2015; Xu, Wang, Yu, 2020), and technology value which refers to the user's benefits created by the use of technology (Poushneh & Vasquez-Parraga, 2017). Attitude was viewed as a

mediating factor between values and consumption behavior in some previous research work (Kim & Chung, 2011; Im, Bhat & Lee, 2015). There are three main dimensions of attitude, cognitive refers to the consumer's awareness, knowledge, beliefs, and ideas (Schiffman & Kanuk, 2004; Liao, Wu, Amaya Rivas & Lin Ju, 2017), affective refers to the customer's emotion and feelings (Fazal-e-Hasan, Lings, Mortimer & Neale, 2017; Duffett, 2020), and conative (or behavioral) convert feelings and emotions into behavior (Huitt & Cain, 2005; Michael, James & Michael, 2018). When comes to consumption behavior, there are three dimensions of consumption mentioned in the literature. Willingness to buy refers to the willingness of a customer to acquire a certain product or service in their purchase considerations (Sweeney & Soutar, 2001; Poushneh & Vasquez-Parraga, 2017; Sivapalan, von der Heidt, Scherrer & Sorwar, 2021), willingness to recommend describes as whether a customer is willing to recommend and to what extent they can recommend a particular product or service to people around them (Choe & Kim, 2018; Nguyen, Nguyen & Le, 2020), and willingness to repurchase is stated about purchase decision on customers about buying certain product or service again (Hellier, Geursen, Carr & Rickard, 2003; Kim, Shin & Kim, 2021). The research conceptual framework and the summarized core concept are illustrated in Figure 1.

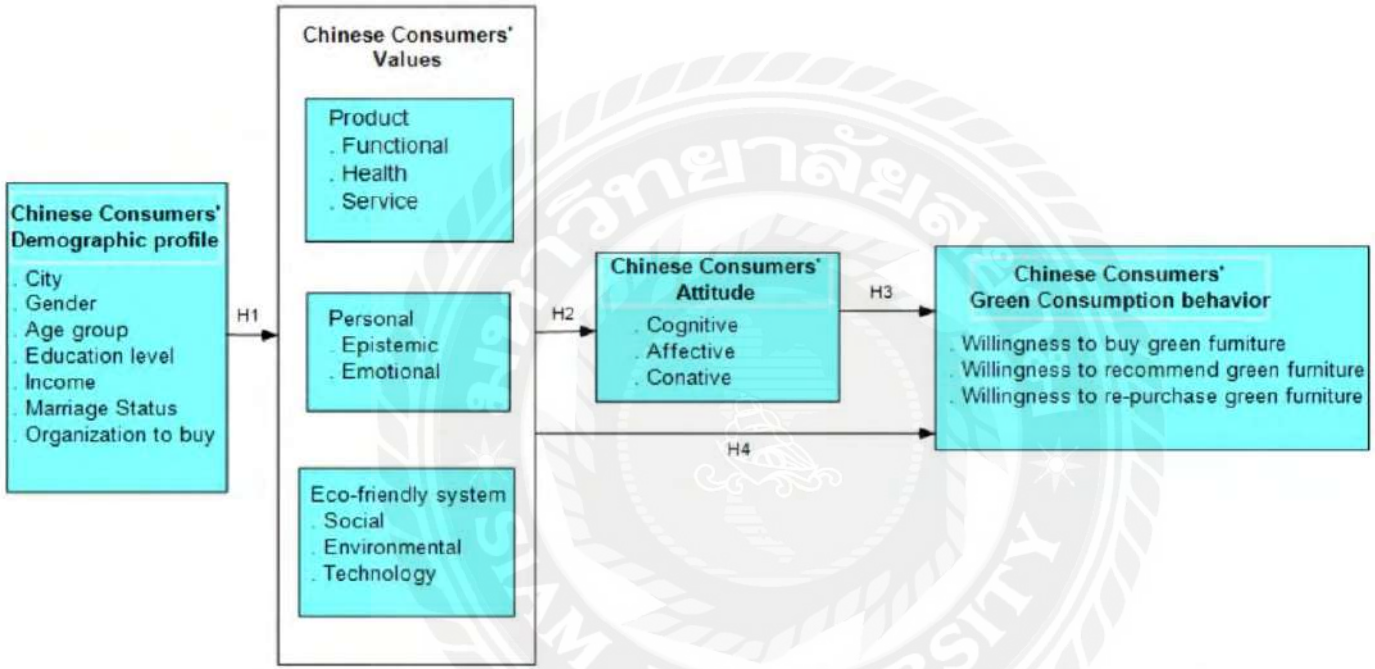


Figure 1. The research framework for Modelling Green Chinese Value-Attitude Enhancing New First-tier Cities' Furniture Consumption Market was developed based on (Khan & Mohsin, 2017), (Choe & Kim, 2018), (Yu & Lee, 2019), (Xu, Hua, Wang & Xu, 2020), (Wang, Shen & Chu, 2021), (Sivapalan, von der Heidt, Scherrer & Sorwar, 2021).

Figure 1. The research framework for Modelling Chinese Consumers in Green-Value-Attitude Enhancing New First-tier Cities' Furniture Consumption Market was reviewed and developed based on (Khan & Mohsin, 2017), (Choe & Kim, 2018), (Yu & Lee, 2019), (Xu, Hua, Wang & Xu, 2020), (Wang, Shen & Chu, 2021), (Sivapalan, von der Heidt, Scherrer & Sorwar, 2021)

Research definitions

Demographic: Demography is the statistical study of populations, especially human beings (Weinstein & Pillai, 2015). Traditional demographic traits such as age range, sex, education level, the status of marriage, race, occupation and jobs, nationality, religion, income, and revenue., etc. (Goyat, 2011).

Green products: Green products also known as "environmentally friendly products", or "eco-products" describe a product that is supposed to have a low environmental effect, lessen the natural resources consumption, and prevent waste generation while causing no harm to individuals throughout the product's lifecycle stages (Commission of the European Communities, 2001; Dangelico & Pujari, 2010; Eneizan, Abd Wahab & Obaid, 2016). Green products are typically can be reused or recycled, they often made of materials that do not contain dangerous chemical materials. Thus, has a low impact on our natural world during its whole lifecycle (OECD, 2009).

Green furniture: Green furniture, sometimes known as "Eco-furniture," is a type of ecologically friendly furniture that takes into account environmental considerations during materials selection, product design, manufacturing, packing, logistics, and other relevant value chain processes, and it is less harmful to consumer physical health and the environment throughout its whole product lifecycle stages (Parikka-Alhola, 2008; Dangelico & Pujari, 2010). There is another similar concept that exists in the academic world – "sustainable furniture" which is defined as furniture products consumers use today in a way that doesn't deplete resources for future generations. Thus, it is typically made of renewable, reuse, recyclable, or nontoxic materials by adopting a circular economy concept to elongate product lifetime and reduce waste (Bosch, Verploegen, Grösser & van Rhijn, 2017). In this study, the researcher takes into account movable green furniture products that support and enable consumers' everyday functions, for example, eating and seating activities in daily life, or use for sleeping functions in private households only.

Values: There are 2 types of value concepts. One refers to the concepts, thoughts, and belief systems that drive a certain ideal situation (Kluckhohn, 2013). Another idea indicates that value is the entire appraisal of the given and received attributes and benefits that are created by certain products or services (Kumar & Reinartz, 2016). In Long & Schiffman (2000)'s study, the value was found to mold consumers' attitudes and shape consumers' behavior. In general, value is typically stated as "consumer value," which reflects the consumer's perspective.

Green Chinese values: Green Chinese values are defined as Chinese consumers' inclination to highlight the importance of environmental conservation through their purchasing and consumption habits and behaviors (Haws, Winterich & Naylor, 2014), viewed as essential factors or attributes that the Chinese consumer will pay great attention to it when they make green furniture consumption decisions.

Product value: Product value refers to the benefits the product offers to the customers, it is a result when comparing the benefits payoff that the customer received (both tangible and intangible benefits) and the total costs when the customer consumes and uses the product (Yadav & Pathak, 2017). Product value is generated when the benefits the customer receives exceed the total cost of their expectation (Slater & Narver, 2000; Snoj, Korda & Mumel, 2004). This study will focus on functional value (perceived physical performance, usefulness, or utility of a certain product), health value (health benefits derived from a product), and service value (benefit appreciated exclusively by the beneficiary from a service) dimensions of the product value (Ruiz, Gremler, Washburn & Carrión, 2008).

Personal value: Personal values are people's persistent beliefs and notions that drive how they practice in their daily lives, they explain consumers' personal preferences and show what is important in their purchase decision-making (Teck Weng & Cyril de Run, 2013). It usually emphasizes perceiving value in terms of personal achievement and perceptions (Jayawardhena, 2004).

This study also focuses on the epistemic and emotional component aspects, where epistemic value refers to the advantages gained from products or service's capabilities to evoke curiosity, offer innovativeness, or fulfill a desire for information and knowledge, while emotional values refer to the benefits obtained from products and service's capabilities to spark feelings and/or emotion states (Ledden, Kalafatis & Samouel, 2007).

Eco-friendly system: Eco-friendly system implies a system that is not environmentally harmful. When it comes to products, this means that everything from production to packaging to how consumers actually use it needs to be considered safe for the environment (Abdelrahman, 2022). This study will focus on eco-friendly systems in terms of social (social groups, social identity, image, approval), environmental (environmental concern, efforts to solve environmental problems), and technology value (value that arises from the use of technology in a product or service) dimensions (Khosrow-Pour, 2005).

Construct: Constructed study consists of components or factors used to assess latent variables which include demographics, Green Chinese values, attitude, and consumption behavior (Choe & Kim, 2018).

Attitude: Attitude usually refers to a consistent tendency of an individual toward a product or service, which includes both positive tendencies and negative tendencies (Kim, Hall & Kim, 2020). This research will focus on attitude dimensions of cognitive, affective, and conative.

Consumption behavior: Consumption behavior, sometimes described as purchase behavior, refers to market participants' (mostly consumers') responses and activities in response to an organization's marketing activities. Green consumption can be divided into three stages. The product's selection and purchase, usage after the purchase, and how the product is disposed after use (Wu, Li & Wang, 2016). This research will focus on consumption dimensions of willingness to buy, recommend, and re-purchase toward green furniture.

New first-tier cities: In 2022, new first-tier cities are a list of 15 Chinese cities that were evaluated by Yicai media group - A famous financial news media

platform in PRC. The evaluation started in 2013, usually, these cities were considered by businesses as markets with great potential for future growth besides the traditional 4 first-tier cities. So, it is quite crucial for businesses to enter the PRC market to learn about the market situation and also the attributes of these emerging cities. Yicai media group ranked these 15 cities according to 5 indicators which are concentration of commercial resources, urban hub focuses on transportation convenience and accessibility, city population's activity including active level of both consuming and social aspects, lifestyle diversity measure behavior diversity in leisure, entertainment and consumption aspects and future plasticity measure city's ability to maintain healthy and long-term growth in the future (Li, Long & Chen, 2018). Using these principles, the Yicai media group ranked 2022's new first-tier cities as Chengdu, Chongqing, Hangzhou, Xi'an, Wuhan, Suzhou, Zhengzhou, Nanjing, Tianjin, Changsha, Dongguan, Ningbo, Foshan, Hefei, and Qingdao (Li, Long & Chen, 2018). These cities were evaluated by using commercial data of enterprises which can be found in the public, consumer purchasing data which can be discovered in e-commerce shopping platforms, and also big data from professional institutions (Yi, Li & Zhang, 2021).

Chinese local-based enterprises are defined as companies that provide goods or services to the Chinese local population (Local business, n.d.).

International-based enterprises may be defined as organizations that buy and sell goods and services across two or more borders, even though their management may be located in one country. It has a single decision-making authority, and the transactions are influenced by exogenous to the home country environment elements. A multinational enterprise may or may not have branch offices in foreign nations. An international enterprise's foreign branch offices function under the strategic framework of the company's home office (International business, n.d.).

A multinational enterprise (MNE) is a business that has operations in more than one country. It signifies an enterprise with overseas operations in

several countries, referred to as subsidiaries or affiliates, each of which has its business strategy based on perceived market conditions or differences in the country where it is situated. A key characteristic of a multinational enterprise is that it functions by establishing a strong local presence through sensitivity and responsiveness to differences between countries (International business, n.d.).

Research contribution of the study

The present study differs from previous research on Chinese customers' value-attitude decision-making regarding green furniture products in the PRC's new first-tier cities market. As Khan & Mohsin (2017) pointed out that a better understanding of consumer value choices can help the green products market flourish, this study develops and examines a new causal model on the selection and consumption of green furniture products based on prior research from both theoretical standpoints, as well as empirical green furniture consumption. Several components of green Chinese values (product value, personal value, eco-friendly system value, service value, and technology value) that influence Chinese consumers' attitude and consumption behavior will be investigated in the study. Based on the identified gaps, the researcher seeks to make the following key contributions to the study:

1) To advocate positive social and environmentally friendly practices in furniture consumption and persuade Chinese consumers, enterprises, and government officials to balance social, economic, and environmental performance. In return, further improve the international standard of green furniture products all over the world.
2) To navigate any negative social and environmental practices in furniture consumption, conduct a marketing strategy to effectively communicate with Chinese consumers, enterprises, and government officials to establish and improve relevant laws and regulations to avoid these negative practices.
3) To identify comprehensive components of green value factors that will affect Chinese consumers' attitude and their choice behavior

toward green furniture products, providing insights to furniture companies on devising and implementing effective marketing strategies to achieve long-term sustainability development in the furniture industry. From an empirical standpoint, this research offers a possible solution to enhance green furniture consumption in the market of PRC's new first-tier cities in the integrated model.

4) To provide possible information for government officials and policymakers to improve the legal system (such as evaluation criteria of green furniture, unified green labeling system, law and regulation standard to subsidy green furniture or constrain non-green furniture) on green furniture sector for Chinese new first-tier cities market and also the international market.
5) To prove and expand existing theories of value-attitude-behavior hierarchy, consumption value, and theory of planned behavior (TPB), examining the mediating effect of attitude between consumer perceived and actual values and consumption behaviors. This study would contribute to theoretical and practical development by integrating some new green Chinese values such as awareness of green furniture, service, and technology values on the grounded theories and consider them as an important antecedent of consumption behavior for new first-tier cities Chinese customers.

CHAPTER 2

Literature Review

This chapter is going to review relevant literature on demographic profile, consumer values, customer attitudes, and consumer green consumption behaviors for a better understanding of all variables in the model. The present literature review will also help to draw a clear picture of related concepts and previous studies in this field. The necessity of further study on consumer's demographic attributes, values, attitudes, and their consumption behaviors in the green furniture context will also be discussed. The main aim of the literature review is to understand existing research on green furniture's consumption and various value theories as well as a rationale to develop a model of value-attitude-consumption behavior in the green furniture industry in PRC's first-tier-cities market and its application.

The grounded theory

The value-attitude-behavior hierarchy theory (Homer & Kahle, 1988; Cheung & To, 2019), consumption value theory (Sheth,1991; Lee, Levy & Yap, 2015), and the theory of planned behavior (TPB) which is initiated by Ajzen (1991, 2015) were used as the theoretical basis for this study. Value-attitude-behavior hierarchy theory which was propounded by Homer & Kahle (1988) and examined by Cheung & To (2019) indicated that influence should theoretically flow from abstract values to midrange attitudes to specific behaviors". It suggests that consumer values are significant in forming environmental attitudes, which in turn results in eco-friendly behavior (Sadiq, Adil & Paul, 2022).

Consumption value theory which is proposed by Sheth, Newman & Gross (1991) and investigated by Lee, Levy & Yap (2015) explained the principle that multiple consumption values, such as functional, emotional, social, and epistemic values, affect consumer behaviors.

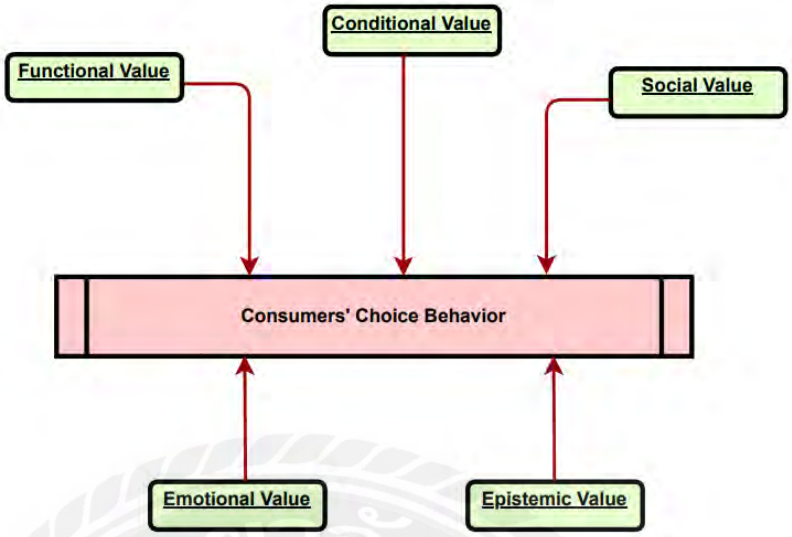


Figure 2. Consumption value theory: Source Sheth, Newman & Gross (1991).

The theory of planned behavior (TPB) which was introduced by Ajzen (1991, 2015) was viewed as an impactful model to explain an individual's green or pro-environmental behavior by many previous studies in the academic world (Armitage & Conner, 2001; Yadav & Pathak, 2016). In the TPB model, actual behavior is determined by the behavioral intention, and the behavioral intention is influenced by three determinants: attitude toward the behavior, subjective norm, and perceived behavioral control (PBC). Furthermore, perceived behavioral control variables have a direct impact on behavior. TPB model was considered a useful model to explore and explain consumer's environmental-friendly behavior in previous studies (Chen & Tung, 2010; Sigurdardottir, Kaplan, Møller & Teasdale, 2013).

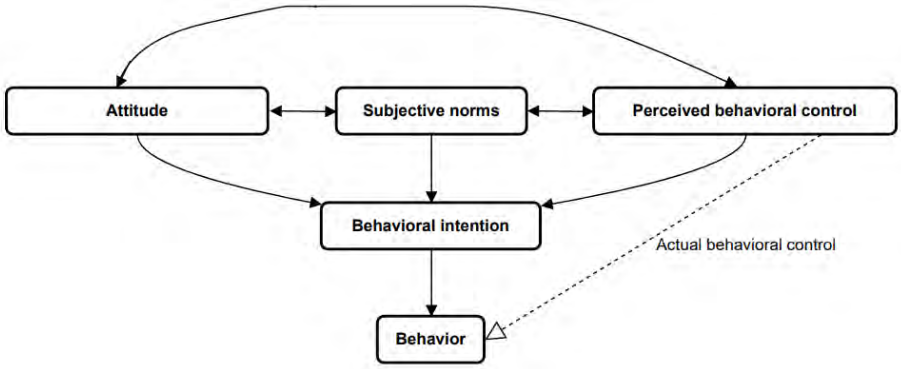


Figure 3. Theory of planned behavior (TPB): Source Ajzen (1991, 2015).

Demographic profile

Demographic profile or socio-demographic characteristics refer to a combination of social and demographic factors that define people in a specific group or population. Typical demographic profiles including such as gender, age, level of education, occupation, race, marital status, income, migration background, religious affiliation, household, employment status, and so on (Rahim, Sulaiman, Chin, Arif & Hamid, 2017). Many prior studies have shown some evidence that demographic factors play a crucial role in consumers' purchasing intention and consumption behaviors, demographic factors were found to be highly related to consumers' consumption choices, and they have more influence, particularly in eco-friendly behaviors.

Previous research approves that gender plays an important role in environmental consciousness and behavior (Kaufmann, Panni, & Orphanidou, 2012). The intention of buying eco-friendly products in females is higher than in males. The reason is that female consumers are more concerned about the environment and the consequences of their actions and attitudes towards the environment than male consumers (Rahim, Sulaiman, Chin, Arif & Hamid, 2017; Teng & Ow, 2014). In most studies, females are the majority of green consumers and perform more environmentally friendly than males (Eagly, 2013; Pickett-Baker & Ozaki, 2008). For example, Loureiro, McCluskey & Mittelhammer

(2002) found in their study that females were willing to pay more for environmentally friendly apples. Fisher, Bashyal & Bachman (2012) discovered in their study that using green products is related to gender, 16.2% of females strongly agreed that they use green products, whereas only 7.4% of males strongly agreed with that statement. The majority of males are identified as non-environmentalists and less active on this matter (Gilg, Barr & Ford, 2005). However, in the United Kingdom, men are becoming increasingly health-conscious (Gatersleben, Steg & Vlek, 2002). In Shahsavar, Kubeš & Baran's (2020) research, there is no significant influence found between gender and willingness to pay premium prices for eco-furniture products in their study.

As well as gender, the impact of age on purchasing environmentally friendly intentions is considered significant. Some of the studies show that younger consumers make their decisions easier and are willing to accept innovative ideas. They are willing to buy eco-friendly products more than older people (Creusen, 2010; Rahim, Sulaiman, Chin, Arif & Hamid, 2017) and would be willing to pay more for environmentally friendly furniture (Ponder, 2013). Other studies confirm that younger consumers are environmentally conscious consumers (Kaufmann, Panni, & Orphanidou, 2012). On the contrary, other studies demonstrated that older age groups are more likely to engage in environmentally friendly consumption (Gilg, Barr & Ford, 2005; Olli, Grendstad & Wollebaek, 2001). Shahsavar, Kubeš & Baran (2020) investigated the influences of demographic factors on willingness to pay more for eco-friendly furniture in Prague – the capital city of the Czech Republic and came to a contrary finding that younger generations were willing to pay less than the older generation which is in agreement with Krause's study conducted in the Czech Republic in 2015 (Krause, 2015). Finisterra do Paço, Barata Raposo & Filho (2009) further

indicated in their study that “the green activists” were primarily from the age segments of 25-34 and 45-54 years old.

Some studies also argued that education level and income level have a positive influence on eco-friendly behavior and eco-friendly purchasing intention (Junaedi, 2012; Giang & Tran, 2014). Chekima, Wafa, Igau, Chekima & Sondoh Jr (2016) found in their study that those with a higher level of education were more likely to exhibit environmentally friendly behaviors. However, Shahsavar, Kubeš & Baran (2020) argued in their study that education has almost no influence on willingness to pay more for eco-friendly furniture. Such research proposes that well-educated mature females with high incomes are more likely to become green consumers. The International Institute for Sustainable Development (2006) found that consumers ’environmentally friendly actions are related to their level of income, the more consumers earn, the more likely they perform environmentally friendly actions (Fisher, Bashyal & Bachman, 2012).

Marital and parental statuses are also essential variables concerning environmentally friendly consumption. It is believed that married couples and parents are more environmentally conscious than single consumers (Wan, Toppinen & Chen, 2014). Laroche, Bergeron & Barbaro-Forleo (2001) studied consumers located in neighborhoods in a large North American city and reported that married females with at least one child living at home were willing to pay more for environmentally friendly products. Shahsavar, Kubeš & Baran (2020) indicated in their research that married couples without children were willing to pay more for environmentally friendly furniture. However, some research failed to find any significant difference in behavior toward eco-friendly purchasing intentions among married consumers, single ones, and families with children (Kheiry & Nakhaei, 2012; Samarasinghe, 2012; Patel, Modi & Paul, 2017).

In research conducted by Chitra among eco-friendly products, furniture was the only product that 11% of respondents were not aware of its eco-friendliness at all. In other words, most of the consumers (89%) of them are fully recognize the eco-friendly attributes of furniture products (Chitra, 2007). This indicates a necessity to conduct further research on eco-furniture or green furniture categories. Diamantopoulos, Schlegelmilch, Sinkovics & Bohlen (2003) indicated a need for a study of the relationships between demographic factors and aspects of environmental consciousness such as knowledge, attitudes, and behavior to segment the market precisely. In this research, the influence of demographic factors on Chinese consumers' values toward green furniture is investigated.

Importance of consumer value

Consumer choice is a function of multiple consumption values. In the 1990s, the concept of consumer value was initially promoted in academia. Since then, consumer value has been paid more and more attention and has aroused big interest in various subjects in academia (Sánchez-Fernández & Iniesta-Bonillo, 2007). Delivery value to consumers was viewed as a way that keep a competitive advantage in the context of economic slowdown, growing global competition, and fast-changing consumer demands. In the long run, delivering value to consumers also helps the company compete in the market and return contributes to its profit (Salem Khalifa, 2004). Almost every marketing activity is involved in the concept of consumer value. Managers need to focus on minimizing the gap between what value customers want and what a company can provide to keep it competitive in the market. If there are some gaps or inconsistencies between these 2 values, it probably will bring some risk to the company. As providing certain customer value involves cost, therefore, it is practically important for a small company or company with a limited budget to precisely examine consumer's value

to distribute their limited resources properly (Wang, Po Lo, Chi & Yang, 2004). Consumer value is also emphasized in the furniture industry.

Definition of consumer value

In today's buyer's market, many scholars have pointed out that consumers are at the center of all business activities (Manning & Bodine, 2012; Kotler, Keller, Brady, Goodman & Hansen,2019). Therefore, identifying customer needs from the consumer's perspective is crucial to the success of today's businesses. Consumer value is assessed from the standpoint of the consumer rather than the organization, and it deals with what these customers desire and perceive they receive from acquiring and using a product or service (Woodruff, 1997). After reviewing the wide literature, the use of the term "value" is diversified. To describe the notion of "value," many phrases such as "value," "consumer value," "customer value," "consumption value," "perceived value," "personal value," and "culture value" are used in the academic world. And there are many different definitions can be found in previous studies, below are some typical well-known ideas:

First, the study of Zeithaml (1988) is one of the most frequently cited papers dealing with the definition of value. He proposed that “perceived value is the consumer’s overall assessment of the utility of a product based on the perceptions of what is received and what is given”. Consumers consider what is “received” as benefits and attributes they got from purchasing or using a product or service, while what is “given” is sacrifices they invest to acquire that product or service, such as money, time, effort, energy, and so on. Some scholars describe value as a tradeoff between the product's quality or benefits and the perceived sacrifice of paying the price (Dodds, Monroe & Grewal, 1991) and it relates to Zeithaml's third definition of value (1988) – “value for money”.

Butz & Goodstein (1996) take a different standpoint on consumer value. They define consumer value as the emotional connection

generated between a customer and a producer after using a salient product or service. This definition emphasizes emotional factors rather than functional utility.

In addition, consumer values can be related to consumer goals and purposes. Woodruff (1997) describes customer value as “a customer’s preference for and evaluation of those product attributes, attribute performance, and consequences arising from use that facilitates to achieve the customer’s goals and purposes in the context of use”.

Meanwhile, Schwartz (1994) defines value as a “desirable trans-situational goal, varying in importance that serves as guiding principles in the life of a person or social entity”, this definition is mainly related to personal values. Finally, Rokeach (1973) defines value as "an enduring belief that a particular pattern of behavior or end state of being is personally and socially preferable to other patterns of behavior or end states of being"

There are some commonalities that can be identified despite many diverse definitions and concepts of values are exist in the academic world. The commonalities include 1) value is usually related to the use of a certain product or service 2) it mostly involves the tradeoff between benefits (e.g. utilities, quality) that customers obtain, and what they scarify (e.g. time, money, effort) to get these benefits. 3) It is from the perspective of the consumer rather than other marketing participants (e.g., enterprises, government).

Previous studies on consumer values in green products and green furniture field

The measurement of consumer value has three classifications: product, personal, and eco-friendly system in this study. Table 1. summarizes some previous research that investigates consumer value in green products and green furniture fields. Each prior study's measurement approach and main findings will be summarized, and the rationale for selecting consumer values variables stated

in the framework will be discussed.

Table 1. Measurement type of consumer value in the green product and green furniture field

Measurement type	Construct	Authors (year)	Study context
Product	• Functional value • Health value • Service value	• Han, Wang, Zhao, and Li (2017) • Biswas (2017) • Xu, Hua, Wang & Xu (2020) • Yadav & Pathak (2016) • Ruiz, Gremler, Washburn & Carrión (2008) • Hsu, Huang, Hsu & Huang (2016) • Cronin Jr, Brady & Hult (2000)	• Electric vehicles • Green furniture • General green products • Service industry
Personal	• Epistemic value • Emotional value	• Rahnama & Rajabpour (2017) • Khan & Mohsin (2017) • Lin & Huang (2012) • Kato (2021)	• General green products • Automobile industry

Table 1. Measurement type of consumer value in the green product and green furniture field (continue)

Eco-friendly system	• Social value • Environment value • Technology value	• Finch (2006) • Gonçalves, Lourenço & Silva (2016) • Wang, Fan, Zhao, Yang & Fu (2016) • Biswas & Roy (2015) • Xu, Wang & Yu (2020) • Rivera, Gregory & Cobos (2015) • Poushneh & Vasquez-Parraga (2017)	• Organic food • General green products • Hybrid electric vehicles • Green furniture • Timeshare industry • Retail industry

Source: Summarized by the author

In the initial stages of consumer value research, many scholars focused their studies on product value aspects, perceived utility such as functional value was considered the decisive factor influencing consumer purchase decisions and mainly causes consumer's choice (Gonçalves, Lourenço & Silva, 2016). Han, Wang, Zhao, and Li (2017)'s research results indicated that functional attributes such as comfortability, performance, pollution level, driving range, charging time, and convenience, have significant effects on consumers' attitude and their acceptance of electric vehicles. Similarly, Biswas (2017) conducted research to investigate persisting gaps about what consumers want and what they finally get for green products in India, and their result indicated that functional value-gap and environmental value-gap have the most adversarial impact on sustainable consumption behavior and market demand for green products. That stands for functional value needs to be enhanced to foster consumer's sustainable consumption behavior.

Health value is also considered an important factor that influences consumer's choice of green products. Xu, Hua, Wang & Xu (2020) argued in their study that physical health concern has a positive and significant effect on consumer's intention to purchase authentic green furniture, suggesting that consumers are afraid of the harmful effect of toxic chemicals in counterfeit green furniture on their physical health.

The evolution of customer value research comes on the heels of recent calls for a greater focus on service and delivery in marketing research (Vargo & Lusch, 2004). Service value describes the focus on the role of various service components in shaping customers' perceptions of value. Ruiz, Gremler, Washburn & Carrión (2008) proposed a formative model of service value with four components: service quality, service equity, confidence benefits, and perceived sacrifice and their research finding showed that the service value index has a positive and significant influence on consumer's satisfaction and repurchase intention. In addition, consumers perceive differences as sacrifices across industries. For standardized services such as movie theaters and fast-food restaurants, managers should consider customer perceptions of the price, time, and effort they expend to acquire and use the service because customers weigh these sacrifices against the benefits they receive. Other scholars present similar results that customers' service quality perception positively affects their satisfaction and consumption behavioral intention, indicating the higher the quality of service is, the higher the consumer satisfaction and behavioral intentions will be (Hsu, Huang, Hsu & Huang, 2016; Cronin Jr, Brady & Hult, 2000).

Epistemic value

Epistemic value was proved to be an effective factor influencing consumer purchasing behavior toward green products. Rahnama & Rajabpour (2017) investigated the impact of five consumption values (including epistemic value) and environmental value on green product selection in Iran and discovered that functional value-price, environmental value, and epistemic value

are the most important factors in green product selection among Iranian consumers. The first crucial component in their study is epistemic value, which revealed that respondents in Tehran had knowledge and awareness about environmental concerns, as well as a significant impact on green product choices.

Emotional value

Many previous studies have argued that the source of competitiveness has switched to emotional value. Kato (2021) conducted comparison research of emotional value and functional value, evaluating their influence on brand favor in the Japanese automobile industry and they found that emotional value, rather than functional value, contributes more to brand preference. However, the functional value, especially the image of safety is still necessary and important for Japanese consumers to accept the product. Based on the theory of consumption values, Khan & Mohsin (2017) try to identify which consumption value factors influence Pakistan consumers' green product choice behavior, and they examined the moderate role of emotional value in functional, social, conditional, epistemic, and environmental values as well. Their research result indicated that functional value (price), social value, and environmental value have a positive impact on green product consumer choice behavior, while conditional value and epistemic value have a negative effect. Functional value (quality) and emotional value do not influence green product consumer choice behavior. As a moderator, emotional value has a significant effect on the role of all five values: functional value, social value, conditional value, epistemic value, and environmental value. Lin & Huang (2012) investigate if there are significant differences in consumption values when consumers have diverse environmental concerns outlooks (respondents were separated into high and low environmental concern groups), by using the theory of consumption values to evaluate the influence factors on consumer choice behavior regarding green products. According to the findings, consumers who are concerned about the environment are more likely to support and purchase green products than those with low environmental concerns. In their study, the key effect factors on consumer choice

behavior regarding green products are "psychological benefit, desire for knowledge, novelty seeking, and specific conditions", but do not include functional values, price, and quality.

Social value

Finch (2006) identified the nature of the consumption values that motivate and differentiate consumers between those who have purchased and never purchased, those who currently purchase, and those not currently purchasing green foods. The finding shows that a mix of consumption values shapes consumers' market choice motives with respect to green foods for all four groups. The two most important factors are social factor (wealthy/educated) and conditional factor (family events) for those who had not purchased green foods, while individuals who have purchased organic foods in the past felt that wealthy, educated, and health-conscious individuals are more likely to buy green food products. When doing a comparison analysis for groups who currently purchase green foods vs. those currently do not purchase green foods, the result showed that consumers who currently do not purchase green foods considered conditional factor (family events) and social factor (wealthy/educated) as the primary important factors, while emotional factor (confusion) played a significant role, That is, the group that currently purchases green foods placed greater emphasis on the importance understanding the foods we consume than those who do not buy green foods. Conversely, each group indicated that they would reduce their consumption of organic foods if the family faced a significant decline in household income.

Gonçalves, Lourenço & Silva (2016) examine whether consumption values can predict green buying behavior using the fuzzy-set qualitative comparative analysis method. The results showed that the functional value is almost always necessary but is not sufficient by itself for predicting green buying. However, it will become sufficient when combined with emotional, conditional, or social values. In contrast, the absence of the functional value is a sufficient condition for not green buying, as well as three other consumption values -

emotional values, conditional value, and social value. Similar to some previous studies, Gonçalves, Lourenço & Silva (2016) found that emotional, conditional, and epistemic values are significant for green product purchasing behaviors, but only when combined with the other values. For example, it becomes sufficient to predict green product purchasing behaviors when social value is combined with emotional or epistemic values and the emotional value is combined with the epistemic value. Further, their finding shows the importance of quality and price for the decisions by men and the importance of social and emotional aspects for the decisions of women. Lin & Huang (2012) also find that social value does not have a significant impact on green product choice behavior. This may be because some respondents did not feel that going green increases social approval or makes a good impression

Environmental value

Some researchers have propounded that environmental values are manifestations of sustainable lifestyle and consumption practices (Biswas, 2017). Yadav & Pathak (2016) added two additional constructs to the Theory of Planned Behavior model and further attempted to find factors that impact Indian young consumers' purchase intention on green products. Their finding showed that consumers' intention to buy green products can be predicted by attitude and environmental concern. Overall, Indian young consumers are concerned about the current environmental problems and have a positive attitude toward purchasing green products for their future use. Taking the theory of planned behavior as the basis theory, Wang, Fan, Zhao, Yang & Fu (2016) added a new variable "personal moral norm" in their extended TPB model and found that consumers' environmental concern has a significant indirect influence on adoption intention of hybrid electric vehicles through the four elements (attitude toward the behavior, subjective norm, perceived behavioral control and personal moral norm). Environmental concern is positively related to attitude, subjective norm, perceived behavioral control, and personal moral norm, and all these four elements mentioned above significantly and positively impact consumers'

adoption intention toward hybrid electric vehicles in China.

Biswas & Roy (2015) argued that consumers will evaluate eco-friendly products' various perceived values when they consider to consume on it. Thus, the authors attempted to identify the consumption values to explain and predict consumers' behavioral intention on green product consumption and willingness to pay premiums by using the theory of consumption values as the grounded theory. They found that environmental attitude has a significant impact on perceived social, epidemic values and value-for-money. Further, the perceived value-for-money and epistemic value are the major predictors of green consumption behavior while social value which stands for the consumer's desire for social recognition or social influence was found to have no significant effect on green product consumption behavior in their study. In addition, their study discovered that the behavioral intention to sustain green product consumption strongly fosters the behavioral intention to pay the green price premium.

Xu, Wang & Yu (2020) attempted to explore Chinese consumers' intention to purchase green furniture by applying an extension model of the theory of planned behavior (TPB) by adding three new variables: health consciousness, environmental awareness, and willingness to pay on the original model. Their empirical findings show that environmental awareness positively affects attitude, subjective norm, perceived behavioral control as well and willingness to pay, and these four components then positively influence consumers' purchase intention on green furniture products. In other words, the four elements (attitude, subjective norm, perceived behavioral control, willingness to pay) play a mediating role between environmental awareness and consumer's purchasing intention of green furniture. Health consciousness also positively affects consumer's attitudes and intentions to purchase green furniture. However, they found an attitude-behavior gap in their research, that is attitude toward purchasing green furniture does not affect purchasing intention significantly. Furthermore, perceived behavioral control has the largest influence on consumer's purchasing intention, followed by health consciousness.

Technology value

According to Rivera, Gregory & Cobos (2015)'s study, almost three of every four people surveyed (72%) have a smartphone, about half of all the respondents bring their laptops to the resort when traveling and two of every five (41%) utilize a tablet. More interesting is the fact that one of every five respondents carries three devices (smartphone, laptop, and tablet), these phenomena demonstrate the immense untapped potential of technology, particularly mobile technology, to impact consumer behavior. A mobile app will not only increase efficiency and effectiveness but also the management of their product, which can increase the owner's satisfaction with their purchase (Bitner, Brown & Meuter, 2000). It also provides a unique opportunity to improve the company's relationship with its customers, create more awareness, foster loyalty, and drive new potential customers via referrals. Some scholars argued that technology, more specifically mobile technology such as mobile apps, may soon become a key factor for sustaining the alliance between timeshare developers, management companies, and consumers (Rivera, Gregory & Cobos, 2015).

Besides mobile technology, augmented reality (AR) is another technology that is gaining more and more attention from both academics and enterprises. Some previous researchers have proposed many advantages of using AR technology in marketing activities. AR provides more 3D product information, in different colors and styles, which enhances user satisfaction's perception of reality. AR also provides user satisfaction with enriched product information gained from a physical store as well as an online store. AR allows the user satisfaction to simulate the product's features on a website in online shopping. In addition, AR empowers users' satisfaction to share their personalized experiences on social networks, which enhances playfulness (Huang & Hsu Liu, 2014).

Rivera, Gregory & Cobos (2015) investigated the relationship of consumer perceptions toward the adoption of mobile technology in the hospitality industry and found that technology experience, usefulness of mobile

apps, and attitude toward mobile apps can be used to explain timeshare owners' intentions to use a mobile application. More specifically, the usefulness of mobile apps and technology experience have a direct influence on attitude, attitude toward a mobile app has the largest significant effect on the intent to use mobile apps (total effect=0.902). In addition, usefulness has very strong effects on both attitudes (directly) and intention to use (indirectly).

Poushneh & Vasquez-Parraga (2017) investigated the impact of augmented reality (AR) on retail user satisfaction, user experience, and willingness to buy, the results show that AR significantly and positively influences user satisfaction, user experience, and willingness to buy. Further, user experience partially mediated the impact of AR on user satisfaction and willingness to buy.

Despite the growing popularity of green products, there has been relatively little research on the beliefs and values for specific green furniture that motivate consumers.

One of the main objectives of this study is to identify the value attributed to green furniture consumption in PRC’s new first-tier market.

Consumer attitudes

Although previous research has demonstrated that the aforementioned values have impacted consumer purchase decisions and consumption behavior. Much research has found that consumer values are frequently associated with attitudes and behaviors (values determine attitudes and behaviors), which are composed of several distinct dimensions (Long & Schiffman, 2000). In the next section of the literature review, the author will talk about the definition of attitude and how previous studies have attempted to examine the influence of attitudes on consumer consumption behaviors. Therefore, the particular dimensions of this concept, such as cognitive, affective, and conative must be investigated.

An individual's persistent tendency to respond favorably or adversely to an object in question is described as their attitude (Kim, Hall & Kim, 2020). According to research, attitude is a direct factor that influences customer

behavior, making it one of the most important types of research on customer behavior (Seyed & Mahnoosh, 2012). Many psychologists took for granted that the study of attitude or mind could be divided into three components: cognition, affection, and conation, it is called the CAC model of attitudes in some literature (Schiffman & Kanuk, 2004). Cognitive refers to the consumer's awareness, knowledge, beliefs, ideas, thoughts, and opinions about the objective, it is linked to knowledge and developed by experience. It usually involves “fact” or “false” and “can be verified or not” (Schiffman & Kanuk, 2004; Duffett, 2020). Cognition is the process of learning and knowing. Consumers become conscious of the product, service, or company brand during the cognitive stage. The cognitive component includes a customer's belief or knowledge of the product or service. A study conducted by Liao, Wu, Amaya Rivas & Lin Ju (2017) indicated that cognitive had significant effects on brand equity.

Affective be described as the emotional and feelings interpretation of customers. The typical impression of affective on customer’s perceptions, searching for information, or knowledge learning such as like/dislike, good/bad, preferred/unpreferred, and so on. It is a feeling and judgment (positive/neutral/negative response) to the objective (Schiffman & Kanuk, 2004). Consumers are in the affective stage after becoming knowledgeable about the offering, service, or company brand and developing either good or bad feelings about the brand. Affective refers to an individual's feelings or emotions toward the attitude object. It is commonly related to one's connection (whether good or bad) to people, events, thoughts, and so on (McLeod, 2018). Affective medication is the relationship between consumer word-of-mouth intention and their involvement (Fazal-e-Hasan, Lings, Mortimer & Neale, 2017). Duffett (2020) researched YouTube marketing communication in South Africa for Generation Z and affirmed that affective (preference) has a positive effect on purchase behavior.

Conative (or behavioral) is the psychological process that initiates and/or directs action and behavior. It is the component of the mind that is responsible

for what motivates an individual to act, endeavor, and exercise one's will (Huitt & Cain, 2005). Consumers' feeling is turned into behaviors (i.e., purchasing intentions and social network word-of-mouth intentions) during the conative stage (Han & Choi, 2019). Michael, James, and Michael (2018) investigated behavior intention by assessing conative variables in word-of-mouth behavior and discovered that the majority of Emirati visitors showed strong desires to return to Australia.

Consumer attitude is described as a person's psychological predisposition that determines how they think or feel about someone or something. The tendency for customers to like or dislike a product, brand, or company, while consumption behavior is the actual action in response to any condition. Attitude and behavior are inextricably linked because a positive attitude results in favorable behavior and a negative attitude causes undesirable behavior in most circumstances. From the perspective of marketers, it is more beneficial for researchers to conduct extensive research on customer's consumption behavior rather than remaining at the attitude stage to contribute the most in both business and societal aspects. Consumption behavior, described as purchase behavior, customers respond to marketing efforts. Green consumption can be divided into three stages: product acquisition, usage, and disposal (Wu, Li & Wang, 2016).

Green consumption behavior

In general, when consumer value refers to a highly ranked or desirable value that represents what consumers desire to happen, such values are considered influential in the pre-purchase stage and, as a result, may influence consumer choices (Al-Sabbahy, Ekinci & Riley, 2004). In these cases, most consumer values are interpreted as factors related to the decision to buy or the willingness to purchase a product or service. Consumption is described as "a mode of action in which individuals use consuming products in various ways" (Holt, 1995). This study focuses on green furniture as a consumption object. Willingness to buy refers to an individual's likelihood and willingness to prefer a certain offering over another in their purchasing decisions (Sivapalan, von der

Heidt, Scherrer & Sorwar, 2021). It shows consumers' proclivity to acquire targeted products and may predict actual buying behavior (Singh & Verma, 2017). Poushneh & Vasquez-Parraga (2017) showed in their study that AR-enhanced user experience and increased their propensity to buy.

Willingness to recommend is described as whether customers are willing to infer a positive message about certain products or services to people (Sivapalan, von der Heidt, Scherrer & Sorwar, 2021). It is one of the factors measuring customer loyalty (Chen & Tsai, 2007). Willingness to recommend behavior is important in marketing because it is considered the most popular and most used way to seek potential customers (Yoon & Uysal, 2005). Choe & Kim (2018) demonstrated that attitudes toward Hong Kong's local food positively influence on intention to recommend and also the intention to visit Hong Kong as one of the food tourism destinations. Customer satisfaction has a strong positive influence on willingness to recommend (Nguyen, Nguyen & Le, 2020). Besides traditional word-of-mouth recommendations, electronic willingness to recommend (e-message) has also aroused widespread attention in the recent digital era (Hennig-Thurau, Gwinner, Walsh & Gremler, 2004).

Willingness to repurchase, also known as repurchase intention, is described as an individual's decision to acquire a specific product or service (Hellier, Geursen, Carr & Rickard, 2003). Kim, Shin & Kim (2021) discovered in their study that brand uniqueness, participation on social media, product innovativeness, and price of the product have an indirect impact through attitude. Similarly, a strong relationship between customers' attitude and their repurchase intentions is found in Jiménez & San-Martín (2017) and Bupalan, Rahim, Ahmi & Rahman (2019)'s studies.

CHAPTER 3

Research Methodology

This chapter will introduce the research methodology of the study, and more detailed information including research design, population & sample size, hypothesis, the scope of the study, steps in data construction, and collection, statistical analysis tools, some SEM analysis methods, and their interpretation will be discussed in this part. The main statistical analysis that which researcher plans to use in the study includes confirmatory factor analysis (CFA), path analysis, correlation, and multiple linear regression. An image of the study about what research methodology and how these methods are used and analyzed should be clearly explained in this chapter.

Research design

This research is equipped with qualitative and quantitative mix methodology. The assessment of Chinese consumers' demographic profile, green Chinese values, attitudes, and consumption behaviors is established through a procedure of literature review, semi-structured interviews, an online pilot test, and then the primary survey. Following an extensive literature review and in-depth face-to-face interviews with 9 furniture industry practitioners, the researcher creates a Green Chinese Value-Attitude model for the first-tier furniture consumption market and will use SEM to test this model through questionnaires. The questionnaire will be firstly drafted after the literature review and may be adjusted according to expert's suggestions after their review to improve the accuracy of the questionnaire. In addition, the researcher will prepare a list of questions within a predetermined thematic framework to guide the conversation, allowing a new concept and ideas to arise during the semi-structured interview process according to what the interviewee comments. Later a questionnaire will be set up after literature review and qualitative interview process to measure variables in the model. Before the main survey, 50 pilot tests (25 offline and 25 online) will be made to modify the survey instruments. Kolmogorov–Smirnov normal distribution test (p-value >0.05), validity

(IOC >0.6), reliability (Cronbach's Alpha, a>0.6) will be tested after pilot data was collected, then a large-scale main survey will be conducted after that to gather information from target respondents and then further measuring variables in the model. Stratified sampling that is based on four cities' proportion from the total population will be selected as the method to select relevant samples for quantitative analysis (more details see Table 2 in the population and sample size part). The goal of qualitative research is to find out several possible ideas, meanings, or ways that come from different individuals based on their own experiences. Scholars have also suggested that sufficiency and saturation can be used to determine the number of interview participants (Seidman, 2006). Sufficiency refers to the number and diversity of participants required to represent the population, whereas information saturation refers to the point at which data gathering no longer discloses new information. Hennink, Kaiser & Marconi (2017) pointed out that the number of participants between 16 to 24 is reasonable and fits well with the available budget. According to Boyd (2001), saturation can typically be attained after interviewing 2 to 10 respondents. Guest, Bunce, and Johnson (2006) discovered that 12 interviews with a homogeneous group can achieve saturation. For this research, the qualitative research uses semi-structured interviews with 9 experts who are currently working in the furniture industry to comprehend the current situation of the green furniture consumption market. All these 9 professional experts from a multinational furniture company that has green furniture product category, detailed information of them as one chief executive officer (CEO), one customer service manager, one sales manager, one marketing manager, two customer service staff, two sales staff, and one logistic & assembling staff. The quantitative research plan to use confirmatory factor analysis (CFA) to confirm significant independent variables in the model, multiple linear regression analysis to examine how demographic, green Chinese values and attitudes related to consumption behavior, path analysis to check the mediating role of attitudes and structural equation modelling (SEM) to test the hypotheses and check the causal

relationship among the variables using SPSS version 23.0 and AMOS version 22.0. A one-way ANOVA was utilized to test the potential differences between the means of the components of the data collected from respondents in different geographic attributes (city, gender, age group, education level, income, marriage status, and organization to buy). The pilot study will use 50 valid surveys (25 offline and 25 online) to modify the survey instruments. The researcher will discuss more details in terms of the following topics 1) Population and sample size 2) Hypothesis 3) The scope of the study 4) The research tools 5) Steps in construction and testing of the research tools 6) Method of collecting data 7) Statistical analysis presentation.

Population and sample size

The researcher plans to study on population of its consumers aged 15 years and up who have purchased green furniture in PRC's four emerging new first-tier cities markets named Chengdu, Hangzhou, Xi'an, and Wuhan. According to the 7th National Census of PRC held on November 1, 2020, the total population of consumers aged 15 and up in Chengdu, Hangzhou, Xi'an, and Wuhan is 18.16 million, 10.62 million, 10.92 million, and 10.72 million respectively. As a result, the total population of these four cities for the current study is 50.42 million (Table 2).

The sample size for SEM analysis is frequently determined by the number of observing variables. There is some evidence exists in the academic world regarding SEM sample size requirements. Typically, the minimum sample size for SEM is 100-150 (Tabachnick & Fidell, 2001). Some researchers consider a larger number, for example, Kline (2023) suggested that 200 is the minimum sample size to conduct a SEM analysis. For normal distribution data, 10 cases (Nunnally, 1975) and 20 cases (Jackson, 2003) per observations per indicator variable are generally accepted rules of thumb in setting a sufficient number of samples for SEM analysis. In this study, the researcher will use 20:1 as the ideal sample size-to-parameters ratio. As this study is designed for 41 questions, thus, the total sampling size would be 820 (41x20) questionnaires using Jackson's

(2003)'s guidelines.

There are two sampling methods in academic usage - the probability sampling method and the non-probability sampling method. Probability sampling is a sampling approach that includes picking a sample, or a part of the population at random. It is also known as random sampling. When utilizing the probability sampling approach, each research unit has an equal chance of being chosen. Simple random sampling (collecting a random sample from the total population), stratified sampling (collecting a random sample from specific strata or subgroups of the whole population), systematic sampling (drawing a random sample from a population by collecting data at regular intervals having started from a random point), and cluster sampling (process of separating the population into groups known as clusters) are the four typical probability sampling methods. In contrast, non-probability sampling is a sampling approach that employs a non-random sample of the population under study depending on particular criteria such as accessibility. When the quantity of the population's units is uncertain or difficult to detect individually, the non-probability sampling approach is utilized. It is also utilized when researchers aim to apply their findings to a specific group or organization instead of the entire population. Non-probability sampling is more likely to be exposed to research biases such as sampling bias than probability sampling (Nikolopoulou, 2022).

Stratified sampling will be used in this study to select samples from every subgroup according to their proportion in the entire population. Specifically, the whole population will be divided into 4 subgroups by cities which are Chengdu, Hangzhou, Xi'an, and Wuhan, and how many samples be selected from each city depend on its proportion of the total population. The research plan is to choose 820 samples in total, and the proportions of Chengdu, Hangzhou, Xi'an, and Wuhan take up 36%, 21%, 22%, and 21% separately. Thus, the researcher needs to collect 295 samples from Chengdu, 173 samples from Hangzhou, 178 samples from Xi'an, and 174 samples from Wuhan. The researcher will select only customers aged 15 and up who have previously purchased green furniture in four

target new first-tier city markets in the PRC. The qualified samples will be picked using filter questions on the questionnaire. Questionnaires will be only sent to respondents who previously purchased green furniture products.

Hypothesis

H1: Demographic characteristics (city, gender, age group, education level, income, marriage status, and organization to buy) have positively affected the influence on Green Chinese values.

H2: Green Chinese values have a positive affective influence on Chinese consumers' attitudes.

H2a: Product values (functional, health, and service) have positively affected Chinese consumers' attitudes.

H2b: Personal values (epistemic and emotional) have positively affected Chinese consumers' attitudes.

H2c: Eco-friendly system values (social, environmental, and technology) have positively affected Chinese consumers' attitudes.

H3: Attitude (Cognitive, affective, and conative) has positively affected Chinese consumers' consumption behavior.

H4: Green Chinese values have positively affected Chinese consumers' consumption behavior toward green furniture.

H4a: Product values (functional, health, and service) have positively affected Chinese consumers' consumption behavior toward green furniture.

H4b: Personal values (epistemic and emotional) have positively affected Chinese consumers' consumption behavior toward green furniture.

H4c: Eco-friendly system values (social, environmental, and technology) have positively affected Chinese consumers' consumption behavior toward green furniture.

The scope of the study

The researcher will clarify the scope of the study from the below aspects to make the scope clearer.

a) Content

According to the conceptual framework, the content researcher is going to study are demographics (city, gender, age group, education level, income, marriage status, organization to buy), Green Chinese values (product value, personal value, eco-friendly system value), attitude (cognitive, affective, conative) and consumption behavior (willingness to buy, willingness to recommend and willingness to re-purchase green furniture) of Chinese consumers in the targeted four new emerging first-tier cities market (Chengdu, Hangzhou, Xi'an, and Wuhan).

b) Place

The researcher plans to do the research in fifteen new first-tier cities in the PRC ranked by Yicai media in 2022. Chengdu, Hangzhou, Xi'an, and Wuhan (2022) were further screened as the four target sample cities when considering both their ranking order and also geographic location in the PRC. Regarding to specific number of samples for each target city, as the proportion of the target population is Chengdu (36%), Hangzhou (21%), Xi'an (22%), and Wuhan (21%), use this weight, the researcher can get quantity of questionnaires need to be collected from each city will be Chengdu 295 questionnaires, Hangzhou 173 questionnaires, Xi'an 178 questionnaires, and Wuhan 174 questionnaires respectively as stated in below table.

Table 2. Population data for target cities

City	Total population	0-14 years	15-59 years	60 years and above	% (population aged 15 years and above)	Questionaires for each city
Chendu	20,937,757.00	2,780,534.13	14,392,614.16	3,764,608.71	0.36	295
Hangzhou	12,204,000.00	1,586,520.00	8,506,188.00	2,111,292.00	0.21	173
Xi'an	12,952,900.00	2,027,128.85	8,850,716.57	2,075,054.58	0.22	178
Wuhan	12,326,518.00	1,608,610.60	8,594,048.35	2,123,859.05	0.21	174
					100%	820

Source: National Bureau of Statistics of China (2021).

c) Time

The researcher plans to collect questionnaires from June to July 2023, it is estimated to take 1 month to collect all requested 820 questionnaires. These online and offline questionnaires are planned to collect in both weekly and weekend time, however, offline will consider putting more effort during the weekend time as the customer will mostly have free time on the weekend to shop for furniture products.

d) Scope of sample

The questionnaire will only be sent to Chinese consumers aged 15 and up who have previously purchased green furniture and live in four targeted new first-tier cities. Total questionnaires aim to collect is 820 samples from Chengdu, Hangzhou, Xi'an, and Wuhan.

The research tools

The quantitative research will use self-administered questionnaires by collecting questionnaires from Chinese consumers who purchased green furniture in four targe sample cities (Chengdu, Hangzhou, Xi'an, and Wuhan) only and also the respondents are requested with aged 15 years and up to be treated as qualified respondents. The questionnaires can be divided into four parts as follows:

Part 1. The demographic attributes of respondents are city location, sex, age range, education level status, income, marital status, and types of organization. City information will be used for categorizing questionnaires from

different cities to meet a number of sample requests for each city in the research design. SPSS version 23.0 will be utilized to illustrate the demographic data of respondents, and some descriptive statistics analysis including frequency, mean, percentage, and standard deviation will be presented for insight into respondent's demographic characteristics.

Part 2. Factors influence Green Chinese values toward green furniture consumption. In this part, green Chinese values in the dimension of product value (functional, health, and service), person value (epistemic and emotional), and eco-friendly system value (social, environment, and technology) are measured by selecting the 5-point Likert-scale as the assess criteria as suggested by Likert (2017) in totally 26 questions. Data interpretation of the participants is shown in Table 3. which is based on the following mean scores underpinned by Jenkins (2007) and Suwannasri (2016).

Table 3. The 5-point Likert's scale interpretation

Weight/Scale	Mean rating	Interpretation
5 scores	4.21-5.00	Strongly Agree
4 scores	3.41-4.20	Agree
3 scores	2.61-3.40	Neutral
2 scores	1.81-2.60	Disagree
1 score	1.00-1.80	Strongly Disagree

Source: Jenkins (2007); Suwannasri (2016).

Part 3. Factors influence attitude toward green furniture consumption. In this part, attitude in the dimension of cognitive, affective, and conative factors was measured by selecting the 5-point Likert-scale method in a total of 5 questions to assess attitude from different angles and depths in order to help customers better understand attitude variables. Data interpretation of the participants can be seen in Table 3 interpreted by Jenkins (2007) and Suwannasri

(2016).

Part 4. Factors influence on consumption behavior of Chinese consumers toward green furniture. This part will measure consumers' consumption behavior in terms of willingness and desire to purchase green furniture, willingness and desire to recommend, and willingness to repurchase green furniture by using a 5-point Likert scale with a total of 3 questions. Data interpretation of the participants can be observed in above in above Table 3 indicated by Jenkins (2007) and Suwannasri (2016) as well.

Steps in construction and test of the research tools

The researcher creates and develops the questionnaire in two steps as follows.

1) Study and understand relevant variables in the research framework by comprehensive literature review, the construction and variables studied are demographic, Green Chinese values, attitude, and consumption behavior toward green furniture to establish the questionnaires appropriately.
2) Checking content validity and reliability by using a statistical index. The validity will be measured by the Index of Item-Objective Congruence (IOC) and make sure the IOC score is higher than 0.60 to meet the content validity requirement. This is based on Vonglao's (2017) suggestion that "the criterion used for selecting a particular strategy is its IOC higher than 0.60".

   IOC refers to the congruence between the strategies and the theory, it can be explained by the below formula:

$$IOC = \frac{\Sigma R}{N}$$

   R refers to the total score of the expert validity assessment

   N is referred to a number of experts

   Criteria for determining the congruence between strategies and objectives

1 means a certainty that there is congruence between strategies and objectives theory

0 means uncertainty if there is congruence between the strategies and the theory

-1 means certainty that there is no congruence between strategies and objectives theory

After the validity of the questionnaires is passed, the 50 pilot test questionnaires (25 offline and 25 online) will be sent first to make sure the questionnaires are understood, clear, and well-designed. The researcher will use statistical methods to test the reliability of the questionnaire by using data collected from these 50 pilot tests and this will be measured by the index of Cronbach's Alpha (α, or coefficient alpha) >0.6 to make sure the questionnaire's internal consistency. This is based on Herman (2015) and Kütükcü et al. (2021) proposals for offering the following Cronbach's alpha coefficient general guidelines:

"$0.60 \leqslant \alpha \leqslant 0.79$ – good reliability, $\alpha \geqslant 0.80$ – highly reliable, and $\alpha < 0.50$ – poor and unacceptable reliability".

After that, the researcher will check normality by using the Kolmogorov-Smirnov test (P value >0.05) to make sure that data in the model is normally distributed. Furthermore, given the IOC score for each question in the study is greater than 0.6, these specific questions could effectively evaluate the test items in the expert's judgments. Table 4 displays the detailed IOC index score:

Table 4: The Item Objective Congruence (IOC) Index on Modelling Chinese Consumers in Green-Value-Attitude Enhancing New First-tier Cities' Furniture Consumption Market

Part 1. Factors influence on Green Chinese values toward green furniture consumption

Measured item	Questions	Expert opinion									IOC	Result
		Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Index	
Functional Product	The eco-friendly furniture is of premium quality	1	1	1	1	0	1	1	1	1	0.89	Accept
	The eco-friendly furniture is durable	1	1	1	1	1	1	0	1	1	0.89	Accept
	The green furniture has beautiful design	1	1	0	1	1	1	1	1	-1	0.67	Accept
	Green furniture is very comfortable	1	1	1	0	1	1	1	1	1	0.89	Accept
Health Product	Green furniture design should focus on physiological aspects	1	1	1	0	1	1	1	1	1	0.89	Accept
	Green furniture is made of non-hazardous and non-toxic materials	1	1	1	1	1	1	1	1	1	1.00	Accept
	Customers think often about health-related issue on green furniture purchase decision	1	1	1	1	1	1	1	1	1	1.00	Accept
Service Product	Well-trained and knowledgeable employees can provide fast and good service	1	-1	1	1	1	0	1	1	1	0.67	Accept
	Regularly on logistics process status check after sells is important	1	1	1	0	1	1	1	1	1	0.89	Accept
	Cordial service relationship with employees can make re-purchase of green furniture	1	1	1	1	1	0	1	1	1	0.89	Accept
	Guarantee promised enhances green furniture consumption	1	1	1	1	1	1	1	0	1	0.89	Accept
Epistemic Personal	A great deal of new and novel information about green furniture was acquired	1	1	0	1	1	1	1	1	1	0.89	Accept
	Customer believe that green furniture is beneficial to themselves and people around them	1	1	1	0	1	1	1	1	1	0.89	
	Customer recommend green furniture to their friends or family	1	0	1	1	-1	1	1	1	1	0.67	Accept
Emotional Personal	Green furniture can satisfy customer's demand	1	1	1	1	1	1	0	1	1	0.89	Accept
	Green furniture can arouse customer's positive feelings	1	1	1	1	1	1	1	1	1	1.00	Accept
Social Eco-friendly system	Buying green furniture is to conform with pro-environmental social identity	1	1	1	1	1	1	1	1	1	1.00	Accept
	Green furniture would help to improve social image	1	1	1	0	1	1	1	1	1	0.89	Accept
	Green furniture purchase would create a good impression on friends and family	1	1	1	1	1	1	1	1	1	1.00	Accept
	Social approval is an important motivator on green furniture consumption	1	1	1	1	1	1	1	1	1	1.00	Accept
Environmental Eco-friendly system	Ecology is a reason to switch product	1	1	1	1	0	1	1	1	1	0.89	Accept
	Green furniture purchase means potential environmental concern issues	1	1	1	1	1	1	1	1	1	1.00	Accept
	Purchasing green furniture is an important aspect of making a social contribution to saving the earth	1	1	0	1	1	1	1	1	1	0.89	Accept
Technology Eco-friendly system	The application of new technology in green furniture products increase its attractiveness.	1	1	1	1	1	1	1	1	1	1.00	Accept
	New technology enhances trust in the manufacturing process of green furniture	-1	1	1	1	0	1	1	1	1	0.67	Accept
	Augmented reality (AR) is empowering for home decoration decision	1	1	1	1	1	1	0	1	1	0.89	Accept
	The innovative technology facilitates green furniture purchasing	1	1	0	1	1	1	1	1	1	0.89	Accept

Part 2: Factors influence on attitude toward green furniture consumption.

Measured item	Questions	Expert opinion									IOC	Result
		Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Index	
Attitude	Customers are aware of green furniture is relevant to them and arouse to their interests	1	1	1	0	1	1	1	1	1	0.89	Accept
	Customers can distinguish green furniture from conventional furniture	1	1	1	1	1	1	1	1	1	1.00	Accept
	Buying green furniture is totally awesome	1	1	1	1	1	1	1	1	1	1.00	Accept
	Customers are inclined to switch to green furniture products	1	1	1	1	1	1	1	1	1	1.00	Accept

Part 3: Factors influence on consumption behavior of Chinese consumer toward green furniture.

Measured item	Questions	Expert opinion									IOC	Result
		Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Index	
Consumption behavior	Customers are willing to purchase green furniture	1	1	1	1	1	0	1	1	1	0.89	Accept
	Customers would recommend green furniture to their friends and family	1	1	1	1	1	1	1	1	1	1.00	Accept
	Customers intend to repurchase green furniture in the future	1	1	1	1	1	1	1	1	1	1.00	Accept

1 means certainty that there is congruence between strategies and objectives theory
0 means uncertainty if there is congruence between the strategies and the theory
-1 means certainty that there is no congruence between strategies and objectives theory

Structural equation modeling and interpretation

In this study, structural equation modeling (SEM) was applied for the main relationship model. SEM is a crucial approach for testing theoretically driven models and comparing different theories, and it may be used to explain a broad spectrum of customer behaviors (Wu, 2010). SEM is a set of multivariate statistical techniques used to measure and evaluate the causal structural relationships between observable and latent variables. SEM examines the structural link between measured variables and latent variables by combining factor analysis, multiple regression analysis, and path analysis. SEM is utilized to define a theoretical causal model composed of a set of predicted covariances between variables and then assess if it is credible when compared to observed data (Jöreskog, 1970).

Below table 5. is a summary of acceptable values for goodness-of-fit criteria according to prior researchers' suggestions.

Table 5. Summary of acceptable values for model fit

Fit Indies Estimates	Recommended Level	Sources
Chi-Square (X^2)	The lower the better (in relation to the degree of freedom) with significance level <.05	Shi, DiStefano, McDaniel & Jiang (2018); Kline (2023)
Goodness of Fit (GFI)	>=.90 acceptable, >.95 excellent	Lee & Kim (2016); Cho, Hwang, Sarstedt & Ringle (2020)
Comparative Fit Index (CFI)	>=.90 acceptable, >.95 excellent	Chinda, Techapreechawong & Teeraprasert (2012); Vassallo & Saba (2015)
Root Mean Square Error of Approximation (RMSEA)	<.05 good fit; between .05 and .08 reasonable fit; between .08 and .10 mediocre fit; and >.10 poor fit	Tennant & Pallant (2012); Pedroso et. al. (2016)
Tucker-Lewis Index (TLI)	>=.90 acceptable, >.95 excellent	Shadfar & Malekmohammadi (2013)

Factor analysis

Factor analysis is a statistical technique that a large number of variables by extracting all their commonalities into a smaller number of factors that are more manageable and more understandable, or some scholars stated as a statistical method used to describe variability among observed. It can also be called data reduction. It's a way to find hidden patterns, show how those patterns overlap, and show what characteristics are seen in multiple patterns. A "factor" is a set of observed variables that have similar response patterns; They are associated with a hidden variable (latent variable) that isn't directly measured. The goal of factor analysis is to model the interrelationships between items with fewer (latent) variables. There are two types of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is if you don't have any idea about what structure your data is or how many dimensions are in a set of variables. CFA is used for verification as long as you have a specific idea about what structure your data is or how many dimensions are in a set of variables. EFA provides information about the optimal number of factors required to represent the data set. With Confirmatory Factor Analysis you can specify the number of factors required. EFA is a data-driven approach, allowing all items to load on all factors, while with CFA you must specify which factors to load. EFA is a good choice about what common factors might exist. If having an idea about what the models look like, and test your hypotheses about the data structure, CFA is a better approach. In short, to explore patterns, use EFA, and if you want to perform hypothesis testing, use CFA.

The most commonly used techniques for investigating the relationship between two quantitative variables are correlation and linear regression. Correlation quantifies the strength of the linear relationship between a pair of variables, whereas regression expresses the relationship in the form of an equation. Correlation analysis is a statistical method that is used to test if there is a relationship between two variables or datasets, and how strong that relationship may be. In other words, it's a measure of how variables are related.

There are usually three different ways of ranking statistical correlation according to Spearman, Kendall, and Pearson. Each coefficient will represent the result as 'r'. The most common correlation coefficient is the Pearson Correlation Coefficient. It's used to test for linear relationships between data. A correlation coefficient is a way to put a value to the relationship. Correlation coefficients have a value of between -1 and 1. A "0" means there is no relationship between the variables at all, while -1 or 1 means that there is a perfect negative or positive correlation.

Linear regression is the next step up after correlation. Regression is a statistical method used in finance, investing, and other disciplines that attempt to examine and determine the strength and character of the relationship between one dependent variable (the main factor that you're trying to understand or predict, usually denoted by Y) and a series of other variables (known as independent variables usually denoted by X, the factors you suspect have an impact on your dependent variable). Regression analysis is a way to find trends in data and is primarily used to build models or equations to predict a key response. Regression analysis is a set of statistical methods used for the estimation of relationships between dependent variables and independent variables. In other words, formulating a regression analysis helps predict the effects of the independent variables on the dependent ones. It is a way of mathematically sorting out which of those independent variables do indeed have an impact on dependent variables. It answers the question: Which factors matter most? Which can we ignore? How do those factors interact with one another? And, perhaps most importantly, how certain of all these factors? The two basic types of regression are simple linear regression and multiple linear regression. Simple linear regression uses one independent variable to explain or predict the outcome of the dependent variable Y, while multiple linear regression uses two or more independent variables to predict the outcome. Multiple regression analysis is almost the same as simple linear regression. The only difference between simple linear regression and multiple regression is in the number of

predictors (“x” variables) used in the regression. Simple regression analysis uses a single x variable for each dependent “y” variable while multiple regression uses multiple “x” variables for each independent variable.

Path analysis is an extension of the multiple regression statistical analysis that is used to evaluate causal models by examining the relationships between a dependent variable and two or more independent variables. It goes beyond regression in that it allows for the analysis of more complicated models. In particular, it can examine situations in which there are several final dependent variables and those in which there are “chains” of influence, in which variable A influences variable B, which in turn affects variable C (Streiner, 2005). Path analysis can estimate both the magnitude and significance of causal connections between variables and determine whether the data are consistent with the model then researchers can better understand the causal relationships between different variables. The path of the model is shown by a square and an arrow that is usually presented in the form of a path diagram, with boxes representing variables and arrows representing paths of relationships to show the causation. Regression weight is predicated by the model and the goodness of fit statistic is calculated to see the fitting of the model.

Method of collecting data

The main survey (410 paper-based offline and 410 online via the wjx platform) will be conducted in four Chinese new first-tier cities to investigate the proposed hypotheses. 410 paper-based offline surveys plan to collect the data from furniture malls in target cities directly, and 410 online questionnaires plan to be sent through wjx – a professional online questionnaire collection platform in PRC.

The four target cities Chengdu, Hangzhou, Xi’an, and Wuhan were selected as the research subject because it is ranked top 5 in the list of “most Commercially Charming Cities in PRC 2022” in the new tier-1 cities classification. Moreover, since the new first-tier cities started to be selected in 2013, these four cities have been always ranked on the list, which indicates the

stability of their urban development to some extent. Chongqing which ranked no.2 in 2022 was removed from the survey target cities because its geographical location and demographic characteristics are similar to Chengdu.

Statistical analysis tools

The statistical tools applied to data analysis and hypotheses test in the study are SPSS version 23.0 and AMOS 22.0 version. Descriptive analysis data including frequency, percentage respondents attribute (i.e. gender, age range, marital status., etc.), means used for measuring the average level of respondents data, standard deviation used for evaluating the dispersion, confirmatory factor analysis (CFA) to confirm significance level of independent variables to dependent variables; multiple linear regression analysis to examine relationship between independent variables and dependent variables and also forecast dependent variables by using independent variables and path analysis to check attitude's mediating role will be examined by SPSS. The adjusted R-squared value which shows how well the data fit the regression model (the goodness of fit) will be presented. As previous researchers have suggested the adjusted R-squared values above 0.50 are acceptable and could be considered relatively strong in the social sciences field (HR & Aithal, 2022). Structural equation modeling (SEM) analytical procedures by AMOS to assess model fit, then further investigate and explain the relationship between all independent variables and Chinese customers' consumption behavior regarding green furniture. Then 820 main questionnaires were sent to target respondents. After the data collection, data analysis, and hypotheses test will be conducted by using SPSS version 23.0 and AMOS 22.0 version statistical software packages.

In conclusion, the purpose of this chapter is to outline the research methodology that was used to design and construct the study. The research design for the current study is descriptive research utilizing questionnaire surveys. The sampling size of 820 respondents was determined using stratified sampling. Various statistical techniques, including validity and reliability measurements, confirmatory factor analysis, correlation, regression analysis,

and path analysis are applied. Structural equation modeling (SEM) would be employed to test the hypothesis.

CHAPTER 4

Research Results

In previous chapters one to chapter three, the author has given a prominent fact of this dissertation by introduction, literature review, and research methodology. This chapter delineates the methodologies employed and discloses the outcomes of the data analysis, commencing with an examination of the demographic attributes of respondents. It utilizes descriptive statistics derived from questionnaires to illustrate respondents' opinions toward observed variables. The preliminary result of the one-way ANOVA test, independent T-test, and confirmatory factor analysis (CFA) were presented with regard to construct validity and reliability. Subsequently, the structural equation modeling (SEM) was conducted, encompassing all variables within the specified model, and this analysis was executed utilizing SPSS version 23.0 and AMOS version 22.0. The questionnaire was distributed from June to July 2023. The author finally collected 832 questionnaires (Chengdu 300 questionnaire, Hangzhou 176 questionnaire, Xi'an 180 questionnaire, and Wuhan 176 questionnaire) which is 1.5% more questionnaire collected than initial plan 820 questionnaire. Given that the proportion of the questionnaires remained consistent with the author's expectation (Chengdu 36%, Hangzhou 21%, Xi'an 22%, and Wuhan 21%), thus, the author decided to use the actual 832 questionnaires for structural equation modeling (SEM) data analysis.

Demographic characteristics of the respondents

Table 6 displays the demographic attributes of the respondents, encompassing information such as city of residence, sexual identity, age range, educational attainment, income, marital status, and organization to buy details. The frequency analysis reveals that 41.8% of the respondents, constituting 348 samples, identified as male, while 58.2% of the respondents, totaling 484 samples, identified as female. The age range of respondents was 43.6% (363 samples) of them were 15 to 29 years old, 50.8% of them (423 samples) were between 30 to 44 years old, 3.6% of them (30 samples) were between 45 to 59

years old and 1.9% of them (16 samples) were 60 and above years old. Regarding educational level, 7.8% of the respondents (65 samples) had senior school and below, 82.1% of the respondents (683 samples) had undergraduate degrees, and 10.1% of them (84 samples) had postgraduate and above degrees. Regarding monthly income (1 Yuan = 5 Baht), the biggest proportion was observed in the category of income exceeding 7,001 yuan, with 375 samples, representing 45.1% of the total, followed by 5,001-7,000 yuan (237 samples, occupied 28.5%) and 3,001-5,000 yuan (151 samples, occupied 18.1%), and the category with lowest proportion is under 3,000 yuan (69 samples, occupied 8.3%). Regarding marital and family status, 49.8% of the sample (414 respondents) were married with one child, 18.5% (154 respondents) were single and stayed alone, and 13.3% (111 samples) of respondents were single & stayed with their parents. The status takes relatively low proportion were married with two or more children take 9.5% (79 respondents) and married without children take 8.9% (74 respondents). This is consistent with China's low birth rate in recent years. Regarding organization types which PRC's new first-tier cities consumers tend to buy green furniture products from, 91.5% of respondents (761 samples) were willing to buy green furniture from Chinese local-based enterprises, followed by 7.2% (60 samples) chose to buy it from internationally based enterprise and only 1.3% (11 samples) prefer to buy it from multinational based enterprises. More details can be depicted in below table 6:

Table 6: Demographic characteristics of respondents (N=832)

Category		Frequency	Percentage (%)
City	Wuhan	176	21.2
	Xi'an	180	21.6
	Hangzhou	176	21.2
	Chengdu	300	36.1
Sex status	Male	348	41.8
	Female	484	58.2
Age range	15-29	363	43.6
	30-44	423	50.8
	45-59	30	3.6
	60 and above	16	1.9
Education	Senior school and below	65	7.8
	Undergraduate	683	82.1
	Postgraduate and above	84	10.1
Income per month (yuan)	Under 3000	69	8.3
	3001-5000	151	18.1
	5001-7000	237	28.5
	Above 7001	375	45.1
Marriage condition	Single and stay alone	154	18.5
	Single and stay with family	111	13.3
	Married without children	74	8.9
	Married with one child	414	49.8
	Married with two or more children	79	9.5
Organization types to buy	Chinese local-based enterprise	761	91.5
	International based enterprise	60	7.2
	Multinational based enterprise	11	1.3

Descriptive statistics and normality test

The analytical methodologies employed in this study encompass descriptive statistical analysis and explanatory procedures. Structural Equation Modeling (SEM) served as the investigative tool for examining the conceptual model and evaluating hypotheses, utilizing SPSS version 23.0 and AMOS

version 22.0. Table 7 furnishes descriptive statistics for all measurement items. Prior to SEM analysis, a crucial step involves assessing normality through skewness and kurtosis (Awang, 2015). Negative skewness values indicate that a majority of scores surpass the mean, while positive skewness values suggest scores predominantly fall below the mean. Regarding kurtosis, positive values signify heavy-tailed distributions with elevated peaks compared to normal data, while negative values indicate the opposite. The outcomes of the normal distribution analysis, presented in Table 7, reveal that the skewness (ranging from -0.384 to -1.488) and kurtosis values (ranging from -0.422 to 2.144) for all items fall within the acceptable thresholds of ±2 for skewness and ±3 for kurtosis, in accordance with Awang (2015), indicating a normal distribution of the data.

Table 7. Descriptive statistics and normality test

Descriptive Statistics							
Observe Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Functional product1: The eco-friendly furniture is of premium quality	832	4.244	0.645	-0.441	0.085	0.049	0.169
Functional product2: The eco-friendly furniture is durable	832	4.006	0.814	-0.386	0.085	-0.422	0.169
Functional product3: The green furniture has a beautiful design	832	3.942	0.817	-0.384	0.085	-0.364	0.169
Functional product4: Green furniture is very comfortable	832	4.148	0.751	-0.557	0.085	-0.129	0.169
Health product1: Green furniture design should focus on physiological aspects	832	4.553	0.669	-1.488	0.085	2.144	0.169

Table 7. Descriptive statistics and normality test (Cont.)

Health product2: Green furniture is made of non-hazardous and non-toxic materials	832	4.538	0.668	-1.380	0.085	1.709	0.169
Health product3: Customers think often about the health-related issues in green furniture purchase decision	832	4.357	0.750	-1.119	0.085	1.337	0.169
Service product1: Well-trained and knowledgeable employees can provide fast and good service	832	4.091	0.787	-0.622	0.085	0.170	0.169
Service product2: Regularly logistics process status check after sales is important	832	4.030	0.880	-0.790	0.085	0.448	0.169
Service product3: Cordial service relationship with employees can make re-purchase of green furniture	832	4.070	0.860	-0.898	0.085	0.879	0.169
Service product4: Guarantee promised enhances green furniture consumption	832	4.258	0.818	-1.064	0.085	1.078	0.169
Epistemic personal 1: A great deal of new and novel information about green furniture was acquired	832	3.650	1.047	-0.461	0.085	-0.417	0.169

Table 7. Descriptive statistics and normality test (Cont.)

Epistemic personal2: Customers believe that green furniture is beneficial to themselves and the people around them	832	4.175	0.793	-0.918	0.085	0.992	0.169
Epistemic personal3: Customers recommend green furniture to their friends or family	832	3.982	0.875	-0.623	0.085	0.059	0.169
Emotional personal1: Green furniture can satisfy customer's demand	832	3.850	0.878	-0.688	0.085	0.624	0.169
Emotional personal2: Green furniture can arouse customer's positive feelings	832	3.793	0.984	-0.625	0.085	-0.052	0.169
Social eco-friendly system1: Buying green furniture is to conform with pro-environmental social identity	832	3.950	0.975	-0.906	0.085	0.503	0.169
Social eco-friendly system2: Green furniture would help to improve social image	832	3.650	1.040	-0.478	0.085	-0.373	0.169
Social eco-friendly system3: Green furniture purchase would create a good impression on friends and family	832	3.656	1.012	-0.514	0.085	-0.169	0.169

Table 7. Descriptive statistics and normality test (Cont.)

Descriptive Statistics							
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Social eco-friendly system4: Social approval is an important motivator for green furniture consumption	832	3.879	0.966	-0.752	0.085	0.255	0.169
Environmental eco-friendly system1: Ecology is a reason to switch product	832	4.082	0.870	-0.863	0.085	0.589	0.169
Environmental eco-friendly system2: Green furniture purchase means potential environmental concern issues	832	4.181	0.821	-1.093	0.085	1.573	0.169
Environmental eco-friendly system3: Purchasing green furniture is an important aspect of making a social contribution to saving the earth	832	4.022	0.886	-0.824	0.085	0.646	0.169
Technology eco-friendly system1: The application of new technology in green furniture products increases its attractiveness	832	4.049	0.813	-0.791	0.085	0.823	0.169

Table 7. Descriptive statistics and normality test (Cont.)

Technology eco-friendly system2: New technology enhances trust in the manufacturing process of green furniture	832	3.970	0.823	-0.621	0.085	0.351	0.169
Technology eco-friendly system3: Augmented reality (AR) is empowering for home decoration decision	832	3.996	0.877	-0.680	0.085	0.157	0.169
Technology eco-friendly system4: The innovative technology facilitates green furniture purchasing	832	4.005	0.803	-0.693	0.085	0.770	0.169
Attitude1: Customers are aware that green furniture is relevant to them and arouses their interests	832	4.058	0.795	-0.535	0.085	-0.047	0.169
Attitude2: Customers can distinguish green furniture from conventional furniture	832	3.596	1.065	-0.507	0.085	-0.332	0.169
Attitude3: Buying green furniture is awesome	832	4.232	0.762	-0.843	0.085	0.731	0.169

Table 7. Descriptive statistics and normality test (Cont.)

Attitude4: Customers are inclined to switch to green furniture products	832	3.987	0.871	-0.697	0.085	0.342	0.169
Consumption behavior1: Customers are willing to purchase green furniture	832	4.113	0.724	-0.441	0.085	-0.065	0.169
Consumption behavior2: Customers would recommend green furniture to their friends and family	832	3.964	0.829	-0.530	0.085	0.049	0.169
Consumption behavior3: Customers intend to repurchase green furniture in the future	832	4.245	0.728	-0.714	0.085	0.309	0.169
Valid N (listwise)	832						

The results of average scores in various dimensions and sub-dimensions

An initial examination of the dataset provided descriptive statistics pertaining to the observed variables. 'Likert' statements were employed to solicit the viewpoints of respondents regarding specific statements. Participants were tasked with expressing their stance on each observed variable by providing

ratings on a 5-point scale: 5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), and 1 (strongly disagree). The data gathered from the survey questions was documented and investigated in the below table 8:

Table 8: Percentage distribution and means of respondents' opinion on Green furniture product value (n=832)

Product Value		**% of total percentages agree ... disagree** ⟶					**Mean** $\overline{X}$	**S.D.**	**Agreeable level**
		5	**4**	**3**	**2**	**1**	**4.204**	**0.769**	**Agree**
PV1	The eco-friendly furniture is of premium quality	35.20	54.70	9.40	0.70	0.00	**4.244**	**0.645**	**Strongly Agree**
PV2	The eco-friendly furniture is durable	30.30	42.90	24.20	2.40	0.20	**4.006**	**0.814**	**Agree**
PV3	The green furniture has a beautiful design	26.30	45.80	23.80	4.00	0.10	**3.942**	**0.817**	**Agree**
PV4	Green furniture is very comfortable	34.50	48.00	15.40	2.20	0.00	**4.148**	**0.751**	**Agree**
PV5	Green furniture design should focus on physiological aspects	63.90	28.60	6.40	1.00	0.10	**4.553**	**0.669**	**Strongly Agree**
PV6	Green furniture is made of non-hazardous and non-toxic materials	62.60	29.60	7.00	0.70	0.10	**4.539**	**0.668**	**Strongly Agree**
PV7	Customers think often about health-related issues in green furniture purchase decision	49.60	38.70	9.70	1.60	0.40	**4.357**	**0.750**	**Strongly Agree**
PV8	Well-trained and knowledgeable employees can provide fast and good service	32.50	47.50	17.10	2.80	0.20	**4.091**	**0.787**	**Agree**

Remarks: Mean=4.21-5.00: strongly agree // Mean=3.41-4.20: agree // Mean= 2.61-3.40: neutral // Mean=1.81-2.60: disagree // Mean=1.00-1.80: strongly disagree (Jenkins, 2007; Suwannasri, 2016).

Table 8: Percentage distribution and means of respondents' opinion on product value (n=832) (Cont.)

Product Value		% of total percentages agree ... disagree →					Mean $\overline{X}$	S.D.	Agreeable level
		5	**4**	**3**	**2**	**1**	**4.204**	**0.769**	**Agree**
PV9	Regularly logistics process status checks after sales are important	32.90	43.50	18.10	4.40	1.00	**4.030**	**0.880**	**Agree**
PV10	Cordial service relationships with employees can make re-purchase of green furniture	33.70	45.60	16.00	3.70	1.10	**4.070**	**0.860**	**Agree**
PV11	The guarantee promised enhances green furniture consumption	45.20	39.30	12.30	2.60	0.60	**4.260**	**0.820**	**Strongly Agree**

Remarks: Mean=4.21-5.00: strongly agree // Mean=3.41-4.20: agree // Mean= 2.61-3.40: neutral // Mean=1.81-2.60: disagree // Mean=1.00-1.80: strongly disagree (Jenkins, 2007; Suwannasri, 2016).

According to Table 8, in terms of product value, the agreeable level was between 4.006 to 4.553, and the overall mean was an agreeable level. And there are 5 questions respondents indicated as “strongly agree”, these 5 questions are: PV1 The eco-friendly furniture is of premium quality; PV5 Green furniture design should focus on physiological aspects; PV6 Green furniture was made of non-hazardous and non-toxic materials; PV7 Customers think often about the health-related issue on green furniture purchase decision; PV11 Guarantee promised enhances green furniture consumption. Among these “strongly agree” questions, 1/5 was about functional value, 3/5 were about health value and 1/5 was related to service value. Simultaneously, the standard deviation ranges from 0.645 to 0.880, signifying a marginal variability in responses to the survey items.

Table 9: Percentage distribution and means of respondents' opinion on personal value (n=832)

Personal Value		% of total percentages agree ... disagree ⟶					Mean $\overline{X}$	S.D.	Agreeable level
		5	**4**	**3**	**2**	**1**	**3.890**	**0.915**	**Agree**
PSV1	A great deal of new and novel information about green furniture was acquired	23.40	35.20	27.20	11.30	2.90	**3.650**	**1.047**	**Agree**
PSV2	Customers believe that green furniture is beneficial to themselves and the people around them	37.30	47.00	12.30	3.00	0.50	**4.176**	**0.793**	**Agree**
PSV3	Customers recommend green furniture to their friends or family	30.80	42.50	21.50	4.40	0.70	**3.982**	**0.875**	**Agree**
PSV4	Green furniture can satisfy customer's demand	22.70	47.20	24.00	4.30	1.70	**3.850**	**0.878**	**Agree**
PSV5	Green furniture can arouse customer's positive feelings	25.60	40.60	23.30	8.40	2.00	**3.793**	**0.984**	**Agree**

Remarks: Mean=4.21-5.00: strongly agree // Mean=3.41-4.20: agree // Mean= 2.61-3.40: neutral // Mean=1.81-2.60: disagree // Mean=1.00-1.80: strongly disagree (Jenkins, 2007; Suwannasri, 2016).

As per the data presented in Table 9, with respect to personal values, the mean of agreement levels falls within the range of 3.650 to 4.176, yielding an overall mean indicative of agreement. Concurrently, the standard deviation spans from 0.793 to 1.047, signifying a minor disparity in responses to the survey items.

Table 10: Percentage distribution and means of respondents' opinion on eco-friendly systems (n=832)

Eco-friendly System		% of total percentages agree ...disagree ⟶					Mean $\overline{X}$	S.D.	Agreeable level
		5	**4**	**3**	**2**	**1**	**3.950**	**0.90**	**Agree**
EFV1	Buying green furniture conforms with pro-environmental social identity	31.70	42.70	16.60	6.90	2.20	**3.950**	**0.975**	**Agree**
EFV2	Green furniture would help to improve the social image	22.80	36.30	26.80	11.20	2.90	**3.650**	**1.040**	**Agree**
EFV3	Green furniture purchases would create a good impression on friends and family	21.50	38.00	28.10	9.40	2.90	**3.660**	**1.012**	**Agree**
EFV4	Social approval is an important motivator of green furniture consumption	28.40	41.90	20.90	6.70	2.00	**3.880**	**0.970**	**Agree**
EFV5	Ecology is a reason to switch product	35.30	43.50	16.00	4.30	0.80	**4.082**	**0.870**	**Agree**
EFV6	Green furniture purchase means potential environmental concern issues	38.50	46.20	11.40	3.00	1.00	**4.182**	**0.821**	**Agree**

Remarks: Mean=4.21-5.00: strongly agree // Mean=3.41-4.20: agree // Mean= 2.61-3.40: neutral //Mean=1.81-2.60: disagree // Mean=1.00-1.80: strongly disagree (Jenkins, 2007; Suwannasri, 2016).

Table 10: Percentage distribution and means of respondents' opinion on eco-friendly system (n=832) (Cont.)

Eco-friendly System		% of total percentages agree ...disagree →					Mean $\overline{X}$	S.D.	Agreeable level
		5	**4**	**3**	**2**	**1**	**3.950**	**0.90**	**Agree**
EFV7	Purchasing green furniture is an important aspect of making a social contribution to saving the earth	32.60	43.40	19.00	3.70	1.30	**4.022**	**0.886**	**Agree**
EFV8	The application of new technology in green furniture products increases its attractiveness.	30.00	49.60	16.20	3.40	0.70	**4.050**	**0.813**	**Agree**
EFV9	New technology enhances trust in the manufacturing process of green furniture	26.70	48.70	20.20	3.80	0.60	**3.970**	**0.823**	**Agree**
EFV10	Augmented reality (AR) is empowering for home decoration decision	31.30	43.40	19.80	4.80	0.70	**3.996**	**0.877**	**Agree**
EFV11	The innovative technology facilitates green furniture purchasing	27.40	49.90	19.40	2.50	0.80	**4.005**	**0.803**	**Agree**

Remarks: Mean=4.21-5.00: strongly agree // Mean=3.41-4.20: agree // Mean= 2.61-3.40: neutral //Mean=1.81-2.60: disagree // Mean=1.00-1.80: strongly disagree (Jenkins, 2007; Suwannasri, 2016).

As delineated in Table 10, pertaining to the value associated with an eco-friendly system, the agreed levels range from 3.650 to 4.182, yielding an overall mean indicative of agreement. Simultaneously, the standard deviation spans from 0.803 to 1.040, signifying a minor discrepancy in responses to the survey items.

Table 11: Percentage distribution and means of respondents' opinion on attitude (n=832)

Attitude		% of total percentages agree ...disagree →					Mean $\overline{X}$	S.D.	Agreeable level
		5	**4**	**3**	**2**	**1**	**3.968**	**0.873**	**Agree**
ATT1	Customers are aware that green furniture is relevant to them and arouses their interests	31.30	46.40	19.50	2.60	0.20	**4.056**	**0.795**	**Agree**
ATT2	Customers can distinguish green furniture from conventional furniture	21.20	36.80	26.60	11.50	4.00	**3.596**	**1.065**	**Agree**
ATT3	Buying green furniture is awesome	40.50	44.60	12.90	1.70	0.40	**4.232**	**0.762**	**Strongly Agree**
ATT4	Customers are inclined to switch to green furniture products	30.30	44.10	20.60	4.10	1.00	**3.987**	**0.871**	**Agree**

Remarks: Mean=4.21-5.00: strongly agree // Mean=3.41-4.20: agree // Mean= 2.61-3.40: neutral // Mean=1.81-2.60: disagree // Mean=1.00-1.80: strongly disagree (Jenkins, 2007; Suwannasri, 2016).

According to Table 11, in terms of attitude, the agreed level is between 3.596 to 4.232, the overall mean indicates an agreeable level. ATT3 (Buying

green furniture is awesome) is strongly agreed by Chinese new first-tier market consumers. Meanwhile, the standard deviation was between 0.762 to 1.065, indicating that there was a minor disparity in response to the survey items.

Table 12: Percentage distribution and means of respondents' opinion on consumption behavior (n=832)

Consumption Behavior		**% of total percentages agree ...disagree** →					**Mean** $\overline{X}$	**S.D.**	**Agreeable level**
		5	**4**	**3**	**2**	**1**	**4.107**	**0.760**	**Agree**
CB1	Customers are willing to purchase green furniture	30.90	51.00	16.80	1.20	0.10	**4.113**	**0.724**	**Agree**
CB2	Customers would recommend green furniture to their friends and family	27.40	46.30	22.10	3.70	0.50	**3.964**	**0.829**	**Agree**
CB3	Customers intend to repurchase green furniture in the future	39.90	46.40	12.10	1.40	0.10	**4.245**	**0.728**	**Strongly Agree**

Remarks: Mean=4.21-5.00: strongly agree // Mean=3.41-4.20: agree // Mean= 2.61-3.40: neutral // Mean=1.81-2.60: disagree // Mean=1.00-1.80: strongly disagree (Jenkins, 2007; Suwannasri, 2016).

According to Table 12, in terms of consumption behavior, the agreed level is between 3.964 to 4.245, and the overall mean is agreement. CB3 (customers intend to repurchase green furniture in the future) was strongly agreed by China's new first-tier market’s consumers by showing a mean score of 4.245 which stands for relatively high satisfaction in their past purchasing experience with green furniture products. To some extent, this also reflects the fact that the green furniture market has plenty of opportunity for growth and future potential. Meanwhile, the standard deviation ranged from 0.724 to 0.829, suggesting a marginal variability in responses to the survey items.

Multicollinearity testing

Collinearity refers to a problem when running a regression model where two or more independent variables have a strong linear relationship. Multicollinearity is described as a statistical concept where three or more independent variables are correlated (have a strong linear relationship) in a model. When the correlation exists between 2 independent variables (predictors), the scholars can no longer determine the effect of predictor one while holding the other constant because the two variables change together. So, collinearity or multicollinearity among independent variables will become less exact and less interpretable, resulting in less reliable statistical inferences. Thus, it is imperative to attend to the issue of collinearity or multi-collinearity before conducting tests on the hypothesized conceptual model (Ozili, 2023).

An approach to evaluate the potential for multicollinearity among the study variables involves conducting correlation analyses. If the correlation coefficient matrix reveals correlations of 0.9 or higher ($r > 0.90$) among the variables, it may indicate the presence of multicollinearity ((Hair, Black, Babin, Anderson & Tatham, 2010)). As indicated in Table 13, the highest correlation observed was 0.547, specifically between the eco-friendly system value EFV2 addressing environmental concerns and the eco-friendly system value EFV3 emphasizing making a social contribution to environmental conservation. Consequently, all variables in the study can be considered for inclusion in the hypothesized model.

Table 13: Implied Pearson Correlations (all variables)

Correlations					
		PV1	PV2	PV3	PV4
PV1	Pearson Correlation	1	.247(**)	.310(**)	.335(**)
	Sig. (2-tailed)		0.000	0.000	0.000
	N	832	832	832	832
PV2	Pearson Correlation	.247(**)	1	.277(**)	.290(**)
	Sig. (2-tailed)	0.000		0.000	0.000
	N	832	832	832	832
PV3	Pearson Correlation	.310(**)	.277(**)	1	.245(**)
	Sig. (2-tailed)	0.000	0.000		0.000
	N	832	832	832	832
PV4	Pearson Correlation	.335(**)	.290(**)	.245(**)	1
	Sig. (2-tailed)	0.000	0.000	0.000	
	N	832	832	832	832
Note: ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Table 13: Implied Pearson Correlations (all variables) (Cont.)

Correlations					
		PV5	PV6	PV7	PV8
PV5	Pearson Correlation	1	.138(**)	.180(**)	.155(**)
	Sig. (2-tailed)		0.000	0.000	0.000
	N	832	832	832	832
PV6	Pearson Correlation	.138(**)	1	.116(**)	.085(*)
	Sig. (2-tailed)	0.000		0.001	0.014
	N	832	832	832	832
PV7	Pearson Correlation	.180(**)	.116(**)	1	0.051
	Sig. (2-tailed)	0.000	0.001		0.144
	N	832	832	832	832
PV8	Pearson Correlation	.155(**)	.085(*)	0.051	1
	Sig. (2-tailed)	0.000	0.014	0.144	
	N	832	832	832	832
		PV9	PV10	PV11	-
PV9	Pearson Correlation	1	.213(**)	.185(**)	-
	Sig. (2-tailed)		0.000	0.000	-
	N	832	832	832	-
PV10	Pearson Correlation	.213(**)	1	.219(**)	-
	Sig. (2-tailed)	0.000		0.000	-
	N	832	832	832	-
PV11	Pearson Correlation	.185(**)	.219(**)	1	-
	Sig. (2-tailed)	0.000	0.000		-
	N	832	832	832	-
Note: ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Table 13: Implied Pearson Correlations (all variables) (Cont.)

Correlations						
		PSV1	PSV2	PSV3	PSV4	PSV5
PSV1	Pearson Correlation	1	.280(**)	.338(**)	.404(**)	.439(**)
	Sig. (2-tailed)		0.000	0.000	0.000	0.000
	N	832	832	832	832	832
PSV2	Pearson Correlation	.280(**)	1	.344(**)	.311(**)	.279(**)
	Sig. (2-tailed)	0.000		0.000	0.000	0.000
	N	832	832	832	832	832
PSV3	Pearson Correlation	.338(**)	.344(**)	1	.271(**)	.345(**)
	Sig. (2-tailed)	0.000	0.000		0.000	0.000
	N	832	832	832	832	832
PSV4	Pearson Correlation	.404(**)	.311(**)	.271(**)	1	.353(**)
	Sig. (2-tailed)	0.000	0.000	0.000		0.000
	N	832	832	832	832	832
PSV5	Pearson Correlation	.439(**)	.279(**)	.345(**)	.353(**)	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	832	832	832	832	832
		EFV1	EFV2	EFV3	-	-
EFV1	Pearson Correlation	1	.406(**)	.347(**)		
	Sig. (2-tailed)		0.000	0.000		
	N	832	832	832		
EFV2	Pearson Correlation	.406(**)	1	.547(**)		
	Sig. (2-tailed)	0.000		0.000		
	N	832	832	832		
EFV3	Pearson Correlation	.347(**)	.547(**)	1		
	Sig. (2-tailed)	0.000	0.000			
	N	832	832	832		
Note: ** Correlation is significant at the 0.01 level (2-tailed).						

Table 13: Implied Pearson Correlations (all variables) (Cont.)

Correlations					
		EFV4	EFV5	EFV6	EFV7
EFV4	Pearson Correlation	1	.287(**)	.233(**)	.344(**)
	Sig. (2-tailed)		0.000	0.000	0.000
	N	832	832	832	832
EFV5	Pearson Correlation	.287(**)	1	.320(**)	.324(**)
	Sig. (2-tailed)	0.000		0.000	0.000
	N	832	832	832	832
EFV6	Pearson Correlation	.233(**)	.320(**)	1	.279(**)
	Sig. (2-tailed)	0.000	0.000		0.000
	N	832	832	832	832
EFV7	Pearson Correlation	.344(**)	.324(**)	.279(**)	1
	Sig. (2-tailed)	0.000	0.000	0.000	
	N	832	832	832	832
		EFV8	EFV9	EFV10	EFV11
EFV8	Pearson Correlation	1	.330(**)	.245(**)	.331(**)
	Sig. (2-tailed)		0.000	0.000	0.000
	N	832	832	832	832
EFV9	Pearson Correlation	.330(**)	1	.197(**)	.352(**)
	Sig. (2-tailed)	0.000		0.000	0.000
	N	832	832	832	832
EFV10	Pearson Correlation	.245(**)	.197(**)	1	.260(**)
	Sig. (2-tailed)	0.000	0.000		0.000
	N	832	832	832	832
EFV11	Pearson Correlation	.331(**)	.352(**)	.260(**)	1
	Sig. (2-tailed)	0.000	0.000	0.000	
	N	832	832	832	832
Note: ** Correlation is significant at the 0.01 level (2-tailed).					

In addition to the correlation matrix, the presence of multicollinearity can be assessed through the examination of tolerance and variance inflation factor (VIF). In this study, scrutiny of multicollinearity issues between independent variables and the dependent variable involved checking tolerance and VIF through regression analysis in SPSS, as detailed in Table 14. If tolerance values are below 0.1 and VIF scores exceed 10, it indicates susceptibility to multicollinearity in the regression equation (Dormann et al., 2013). The independent variables comprised twenty-seven categories of values among Chinese consumers, while the dependent variable was the attitude toward green furniture. Notably, multicollinearity did not emerge as a concern in this study, as evidenced by the minimum tolerance value of 0.539 (social value) and the highest VIF score of 1.855 (social value – good impression) within the regression model.

Table 14: Tolerance and variance inflation factor (VIF)

Coefficients(a)								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.093	0.316		0.296	0.768		
	func1quality	0.054	0.046	0.04	1.185	0.236	0.729	1.372
	func2dural	0.04	0.036	0.037	1.101	0.271	0.744	1.343
	func3design	0.042	0.035	0.04	1.191	0.234	0.759	1.317
	func4comfort	0.068	0.038	0.059	1.771	0.077	0.768	1.303
	hea1physiolo	0.041	0.04	0.032	1.027	0.305	0.875	1.143
	hea2nonhazar	0.008	0.04	0.006	0.207	0.836	0.894	1.119
	hea3health	0.084	0.036	0.072	2.293	0.022	0.855	1.169
	ser1wellemplo	-0.044	0.035	-0.039	-1.237	0.216	0.83	1.205
	ser2logistic	0.025	0.032	0.025	0.781	0.435	0.796	1.257
	ser3relation	0.071	0.033	0.07	2.112	0.035	0.771	1.296
	ser4guarantee	0	0.036	0	0.009	0.992	0.745	1.342
	epis1novelinfo	0.009	0.031	0.011	0.291	0.771	0.593	1.686
	epis2believebene	0.021	0.038	0.019	0.552	0.581	0.706	1.416
	epis3recommend	0.069	0.034	0.07	2.01	0.045	0.7	1.429
Note: Dependent Variable: att								

Table 14: Tolerance and variance inflation factor (VIF) (Cont.)

Coefficients(a)								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.093	0.316		0.296	0.768		
	emo1satisfydem	0.157	0.035	0.158	4.49	0	0.675	1.481
	emo2positivefels	0.062	0.032	0.07	1.951	0.051	0.651	1.536
	soc1socialidentity	0.09	0.032	0.101	2.838	0.005	0.668	1.496
	soc2socialimage	0.062	0.033	0.074	1.881	0.06	0.546	1.831
	soc3goodimpres	0.065	0.034	0.075	1.909	0.057	0.539	1.855
	soc4socialappr	0.032	0.032	0.035	0.983	0.326	0.655	1.527
	env1ecology	0.002	0.034	0.002	0.063	0.949	0.749	1.335
	env2environcon	0.009	0.035	0.008	0.244	0.807	0.767	1.305
	env3savingearth	0.064	0.035	0.065	1.826	0.068	0.671	1.491
	tec1newtechattra	0.065	0.037	0.061	1.764	0.078	0.703	1.423
	tec2newtechtrust	0.067	0.037	0.063	1.793	0.073	0.675	1.482
	tec3arempower	0.013	0.032	0.013	0.405	0.685	0.822	1.216
	tec4techpurcha	0.036	0.038	0.033	0.949	0.343	0.693	1.443
Note: Dependent Variable: att								

Validity and reliability

The Item Objective Congruence (IOC) Index, introduced by Rovinelli and Hambleton (1977), serves as the criterion for assessing item quality and appraising content validity. The scoring range of the index for each item spans from -1 to 1. The experts were tasked with assigning a content validity score to each item based on the IOC score. A score of 1 denotes unanimous agreement among experts that the item measures the specified objective and does not measure other objectives. Conversely, a score of -1 indicates expert consensus that the item does not measure the hypothesized objective. A score of 0 reflects expert uncertainty regarding whether the item effectively measures or fails to measure the specified objective. In this study, IOC >0.6 was set as the content

validity requirement according to Vonglao (2017)'s suggestion. Any items that have IOC scores lower than 0.6 must be revised or considered deleted. During this process, the questionnaire was reviewed by nine professionals who currently working in the furniture industry: one chief executive officer (CEO), one customer service manager, one sales manager, one marketing manager, two customer service staff, two sales staff, and one logistic & assembling staff. These experts indicated that all the questions measure the expected objective clearly and satisfy the IOC validity requirement.

The questionnaire underwent a pretest administered to a representative sample of the population, with a sample size of n=832. The reliability was checked by Cronbach's alpha. In the literature, Cronbach's alpha values $0.50 < \alpha < 0.80$ are regarded to be of moderate reliability, among this range, alpha value $0.60 \leq \alpha \leq 0.79$ demonstrates good reliability, and $\alpha \geq 0.80$ is considered highly reliable while alpha value under 0.50 represented poor and unacceptable reliability (Kütükcü et al., 2021). Herman (2015) suggested that it is difficult to get a high alpha if with few items, the author pointed out that Cronbach's alpha tends to underestimate the internal consistency of scales comprising fewer than 10 items, prompting the consideration of mean inter-item correlation values as an alternative measure of internal consistency. This study aims to have an alpha value greater than 0.6 which is considered a quite reliable level.

The Kaiser-Meyer-Olkin (KMO) values surpassed the recommended threshold of 0.7, and the significance of Bartlett's test of sphericity ($p < 0.05$) was established (Pallant, 2007). There are a total of 34 observed variables used to measure 10 latent variables. Specifically, the functional product value comprised 4 observed variables, health product value comprised 3 observed variables, service product value comprised 4 observed variables, epistemic personal value comprised 3 observed variables, emotional personal value v 2 observed variables, social eco-friendly system value comprised 4 observed variables, environment eco-friendly system value comprised 3 observed variables, technology eco-friendly system value comprised 4 observed variables,

attitude has 4 observed variables and finally consumption behaviors has 3 observed variables.

As prior scholars suggested “if less than 10 items, Cronbach’s alpha value should be >0.6” due to it being difficult to get a high alpha with few items. In this study, it has 7 items for demographic variables, so, Cronbach’s alpha>0.6 is acceptable. The product value has 11 items and obtained a Cronbach’s alpha value as 0.667. The personal value has 5 items, and obtained a Cronbach’s alpha as 0.717. The eco-friendly system included 11 observed variables, and with a Cronbach’s alpha value as 0.823. Attitude included 4 observed variables, and got a Cronbach’s alpha as 0.601. Consumption behavior has 3 items, and Cronbach’s alpha was 0.604. As attitude and consumption behavior are both with less than 10 items, acceptable Cronbach’s alpha was set as equal to or greater than 0.6, thus, these two variables meet the reliability statistics request (see table 15). As per the data presented in Table 16, the Kaiser-Meyer-Olkin (KMO) for all dimensions under investigation in this study is 0.948, surpassing the recommended threshold of 0.7. Additionally, the significance level of Bartlett’s test of sphericity was determined to be 0.000, which is less than the conventional threshold of 0.05. Consequently, the current study adheres to the stipulated criteria of KMO and Bartlett’s Test for conducting factor analysis.

Table 15: Cronbach’s alpha (reliability statistics) for variables in the model

Variables	Number of items	Cronbach’s Alpha
Product value	11	0.667
Personal value	5	0.717
Eco-friendly system value	11	0.823
Attitude	4	0.601
Consumption behavior	3	0.604

Table 16: Summary of KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.948
Bartlett's Test of Sphericity	Approx. Chi-Square	7527.640
	df	561
	Sig.	.000

Confirmatory factor analysis of Chinese consumers' green furniture consumption behavior

In the present study, an examination of the measurement model involved the application of confirmatory factor analysis (CFA) before embarking on a path analysis of the structural model. CFA, a variant of structural equation modeling, is specifically designed to elucidate the relationship between observed variables (indicators) and latent variables, often referred to as factors (Brown & Moore, 2012). The primary objective of factor analysis is to ascertain the number and nature of factors accounting for variance and covariation among a set of indicators. Confirmatory factor analysis was performed using Amos version 22.0. The assessment of model fit in CFA is imperative to gauge the alignment of the proposed measurement model with the data (Kline, 2023). Various indices, including the $\chi 2$/df statistic, Root Mean Square Residual (RMR), Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI), are reported to evaluate the model fit ((Hair, Black, Babin, Anderson & Tatham, 2010)). Table 17 presents the acceptable threshold levels for the goodness-of-fit indices.

Table 17. Goodness-of-fit indices for the CFA/SEM model

Fit Indies Estimates	Recommended Level	Sources
Normed Chi-square (CMIN/DF)	<3.00 good fit	Kline (2023)
Goodness of Fit Index (GFI)	>=.90 acceptable >.95 excellent	Lee & Kim (2016); Cho, Hwang, Sarstedt & Ringle (2020)
Adjusted Goodness of Fit Index (AGFI)	>=.85 acceptable >=.90 good fit	Schermelleh-Engel, Moosbrugger & Müller (2003)
Comparative Fit Index (CFI)	>=.90 acceptable >.95 excellent	Chinda, Techapreechawong & Teeraprasert (2012); Vassallo & Saba (2015)
Normed Fit Index (NFI)	>=.90 acceptable	Wu (2009); Yaşlioğlu & Yaşlioğlu (2020)
Incremental Fit Index (IFI)	>=.90 acceptable	Feng & Chen (2020)
Root Mean Square Residual (RMR)	<.05 good fit	Bruner II & Kumar (2005); Zeynel (2023)
Root Mean Square Error of Approximation (RMSEA)	<.05 good fit between .05 and .08 reasonable fit	Tennant & Pallant (2012); Pedroso et al., (2016)
Tucker-Lewis Index (TLI)	>=.90 acceptable >.95 excellent	Shadfar & Malekmohammadi (2013)

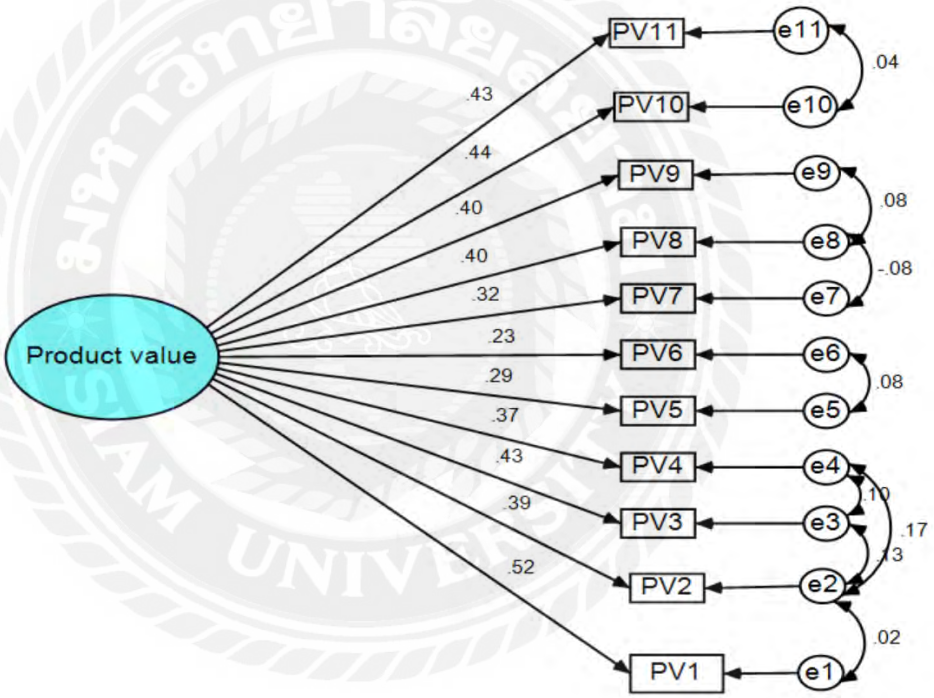
The result of the CFA analysis was as follows:

Product value

Product value (PV) was measured with 11 observed variables (PV1, PV2,

PV3, PV5, PV6, PV7, PV8, PV9, PV10 and PV11). The assessment of the measurement model revealed favorable fitness indicators (X^2=173.741; RMR=0.029<0.05; GFI=0.962>0.90; RMSEA=0.068<0.1; AGFI=0.931>0.90). Notably, all these indices surpass the established benchmarks for acceptable model fit, as illustrated in Figure 4. As PV5 and PV6 have relatively low parameter values 0.23 and 0.29 separately which indicate these two observed variables with less power to predict product value, therefore the author considers deleting PV5 and PV6 in the paper's final SEM model.

Figure 4: Measurement model for product value



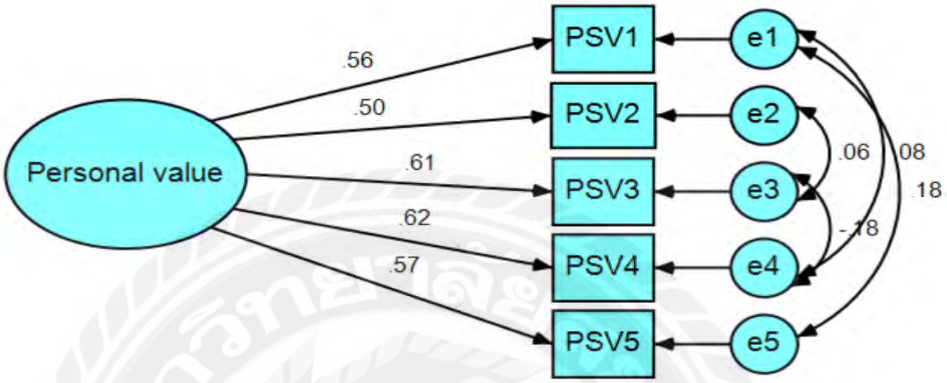
Chi-square=173.741; p=0.000<0.05; DF=36; RMR=0.029<0.05;
GFI=0.962>0.90; RMSEA=0.068<0.1; AGFI=0.931>0.90

Personal value

Personal value (PSV) was measured with 5 observed variables (PSV1, PSV2, PSV3, PSV4, PSV5), the assessment of the measurement model demonstrated commendable fitness (X^2=0.022; RMR=0.001<0.05;

GFI=1.00>0.90; RMSEA=0.000<0.1; AGFI=1.00>0.90). It is noteworthy that all the indices surpass established criteria for acceptable model fit, as depicted in Figure 5.

Figure 5: Measurement model for personal value

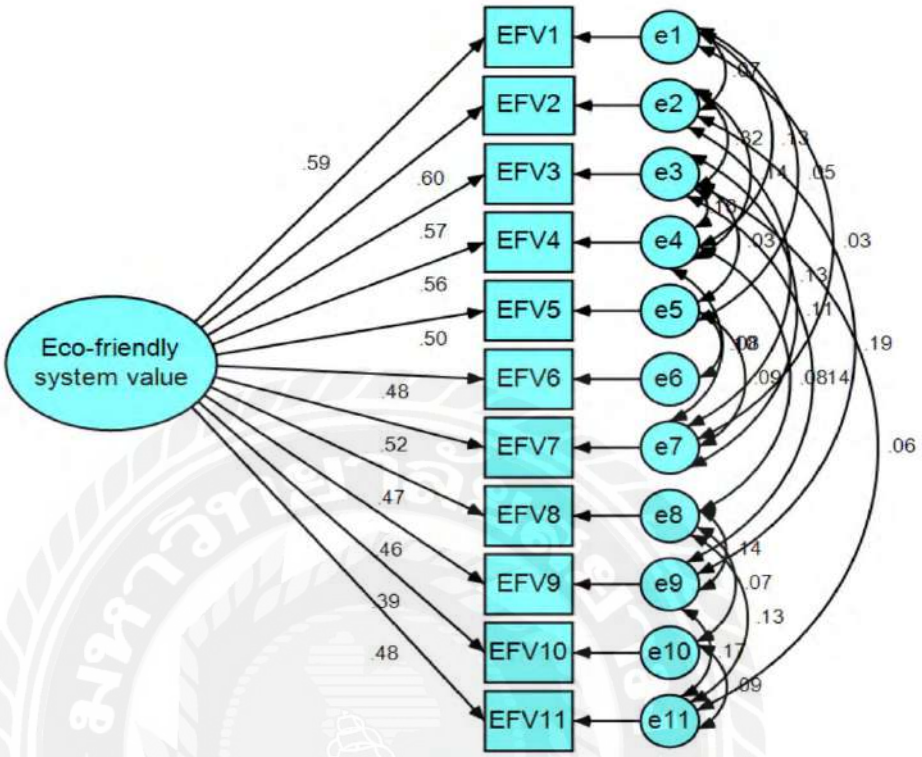


Chi-square=0.022; p=0.882>0.05; DF=1; RMR=0.001<0.05; GFI=1.00>0.90; RMSEA=0.000<0.1; AGFI=1.00>0.90

Eco-friendly system value

Eco-friendly system (EFV) was measured with 11 observed variables (EFV1, EFV2, EFV3, EFV4, EFV5, EFV6, EFV7, EFV8, EFV9, EFV10, EFV11). Among these 11 observed variables, EFV10 with relatively low score of 0.39 to explain eco-friendly system value. Therefore, EFV10 will be deleted in the final analysis of the SEM model. The evaluation of the measurement model indicated favorable conformity to the data (X^2=33.223; RMR=0.013<0.05; GFI=0.993>0.90; RMSEA=0.025<0.1; AGFI=0.978>0.90). It is noteworthy that all indices surpassed the established benchmarks for acceptable model fit, as illustrated in Figure 6.

Figure 6: Measurement model for eco-friendly system value

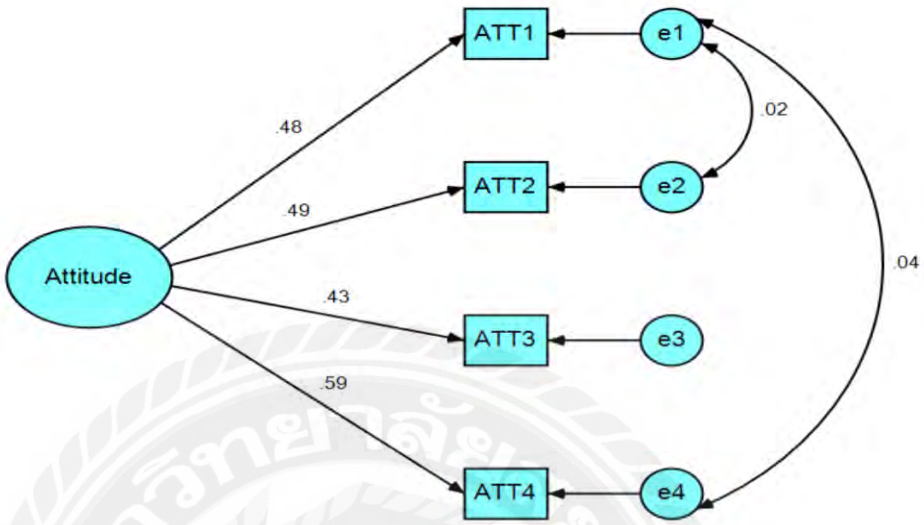


Chi-square=33.223; p=0.059>0.05; DF=22; RMR=0.013<0.05; GFI=0.993>0.90; RMSEA=0.025<0.1; AGFI=0.978>0.90

Attitude

Attitude (ATT) of Chinese new first-tier cities' consumers toward green furniture consumption was measured with 4 observed variables (ATT1, ATT2, ATT3, and ATT4). The evaluation of the measurement model demonstrated satisfactory model fitness (X^2=0.000; RMR=0.000<0.05; GFI=1.00>0.90; RMSEA=0.229<0.1; AGFI=1.00>0.90). It is pertinent to note that all indices surpassed the established criteria for acceptable model fit, as depicted in Figure 7.

Figure 7: Measurement model for attitude

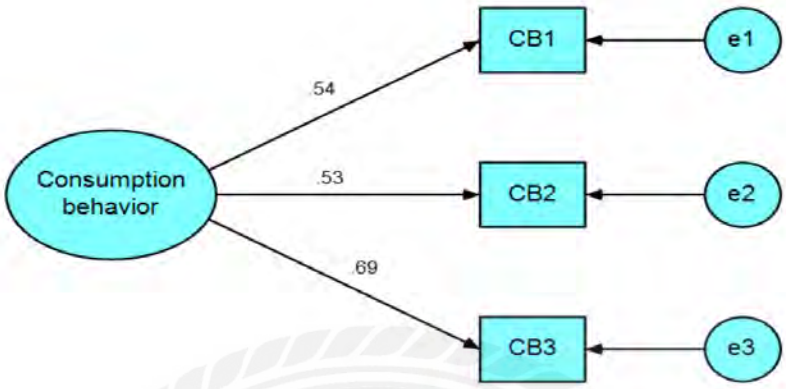


Chi-square=12.000; p=0.06>0.05; DF=5; RMR=0.015<0.05; GFI=0.995>0.90; RMSEA=0.056<0.1; AGFI=0.975>0.90

Consumption behavior

Consumption behavior (CB) was measured with 3 observed variables (CB1, CB2 and CB3). The evaluation of the measurement model indicated a commendable fitness of the model (X^2=0.000; RMR=0.000<0.05; GFI=1.00>0.90; RMSEA=0.032<0.1; AGFI=1.00>0.90). It is noteworthy that all indices surpassed the acceptable standards for model fit, as illustrated in Figure 8.

Figure 8: Measurement model for consumption behavior



Chi-square=1.102; p=0.061>0.05; DF=3; RMR=0.014<0.05; GFI=0.996>0.90; RMSEA=0.032<0.1; AGFI=0.980>0.90

Factor loading

Following the successful validation process, the measurement model underwent testing using a sample size of N=832. The outcomes, as presented in Table 19, showcased the factor loadings of product value, personal value, eco-friendly system value, attitude, and consumption behavior within the model. The confirmatory factor analysis (CFA) results indicated a satisfactory level of fit for overall fit indices, except the chi-square value (χ^2 (832) = 602.439, p=0.000). Nevertheless, other fit indices proved to be more informative in assessing the model, considering the sensitivity of the chi-square value to sample size (Choe & Kim, 2018). Goodness-of-fit analyses were subsequently conducted for the following indices: CFI= 0.945, TLI= 0.935, RMSEA= 0.037, and GFI= 0.944. The standardized factor loading for each item ranged from 0.400 to 0.688, surpassing the threshold of 0.4. Calculations of the average variance extracted (AVE) yielded values exceeding 0.50 for all variables, confirming convergent validity. Moreover, all composite reliability (CR) values fell between 0.601 to 0.823, surpassing the designated cut-off of 0.6. Consequently, the primary

dataset satisfies the criteria for the proposed model. In summary, the proposed model exhibits sufficient reliability and validity to proceed with the structural model test.

Items with factor loadings less than 0.40 were deleted as suggested in previous studies (Lee, Lee & Park, 2014). Using this principle, items PV5, PV6, and EFV10 were deleted due to their low factor loading as 0.29, 0.23, and 0.39 separately because these items were considered does not load meaningfully on the components. And items PV4, PV7, PV8, and EFV9 were deleted as modification index suggestions to improve the model fitness. Consequently, 8 items out of the original 34 were excluded from the analysis. The eliminated items are detailed in Table 18.

Table 18: Items removed through the initial CFA.

No	Deleted items	Description
1	PV4	Green furniture is very comfortable
2	PV5	Green furniture design should focus on physiological aspects
3	PV6	Green furniture is made of non-hazardous and non-toxic materials
4	PV7	Customers think often about the health-related issues in green furniture purchase decision
5	PV8	Well-trained and knowledgeable employees can provide fast and good service
6	EFV6	Green furniture purchase means potential environmental concern issues
7	EFV9	New technology enhances trust in the manufacturing process of green furniture
8	EFV10	Augmented reality (AR) is empowering for home decoration decision

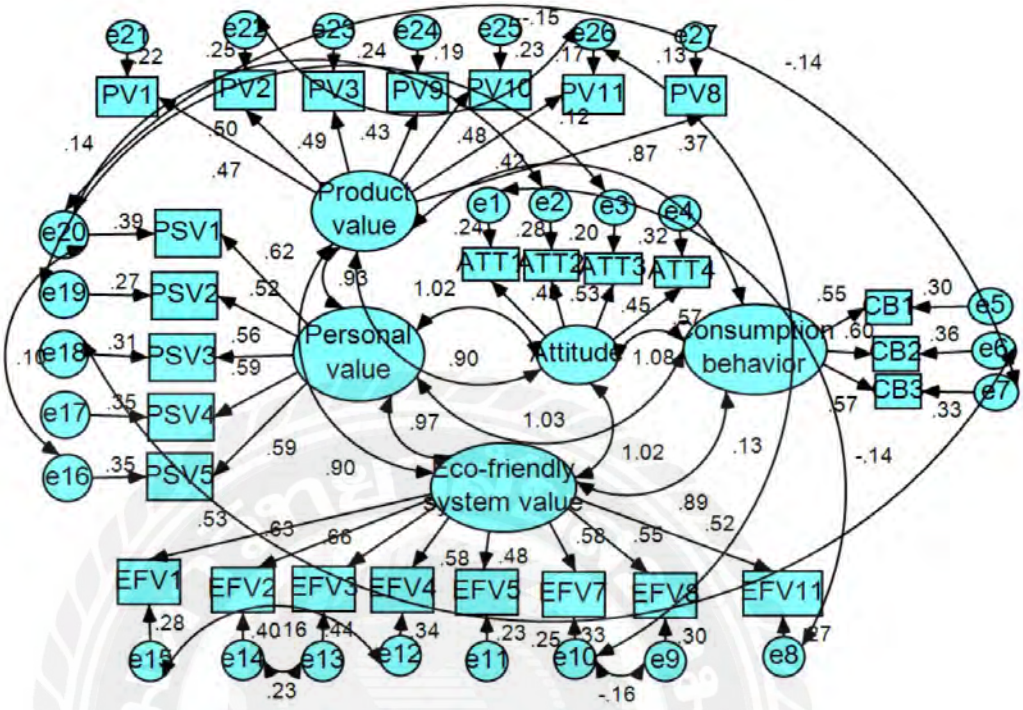
Finally, 26 observed variables have been identified as suitable for further analysis within the framework of structural equation modeling (SEM). Comprehensive details are provided in Table 19.

Table 19: Factor loading for the measurement model of Chinese consumers' consumption behavior toward green furniture (n=832)

Unobserved variables	Observed variables	Factor Loading: λ				
		AVE	CR	St. Loading Factor	Z value	P value
Product value	PV1	0.514	0.667	0.521	--	--
	PV2			0.400	7.263	*
	PV3			0.434	7.940	*
	PV9			0.400	7.498	*
	PV10			0.439	7.962	*
	PV11			0.431	7.86	*
Personal value	PSV1	0.526	0.717	0.558	--	--
	PSV2			0.498	6.861	*
	PSV3			0.608	6.101	*
	PSV4			0.625	8.156	*
	PSV5			0.565	10.416	*
Eco-friendly system value	EFV1	0.587	0.823	0.594	--	--
	EFV2			0.598	11.37	*
	EFV3			0.569	9.959	*
	EFV4			0.564	11.25	*
	EFV5			0.498	9.991	*
	EFV7			0.518	9.986	*
	EFV8			0.471	9.27	*
	EFV11			0.482	9.347	*
Attitude	ATT1	0.541	0.601	0.479	--	--
	ATT2			0.488	4.954	*
	ATT3			0.435	4.138	*
	ATT4			0.586	5.574	*
Consumption Behavior	CB1	0.562	0.604	0.537	--	--
	CB2			0.531	8.873	*
	CB3			0.688	8.105	*

Note: χ^2 (832) = 602.439 (p=.000); TLI=0.935; CFI=0.945; RMSEA=0.037; NFI=0.902; GFI=0.944; * p<0.001

Figure 9: CFA of the measurement model (N=832)



Structural equation modeling fitting

A robust measurement model, ensuring adequacy in terms of model fit, reliability, and validity, was established through confirmatory factor analysis (CFA). Subsequently, Structural Equation Modeling (SEM) was employed to assess the primary conceptual model, which encapsulates the three main hypotheses of the present study. Maximum Likelihood Estimation (MLE) in AMOS version 22.0 was utilized for estimating the hypothesized model, aiming to determine its consistency with the collected data. The adherence of the SEM model to predefined criteria was evaluated through goodness-of-fit measures, as delineated in Table 17.

The structural model delineated the postulated relationships among the model constructs, which were categorized and measured across three distinct segments. The independent variables: product value (PV: PV1, PV2, PV3, PV9, PV10, PV11), personal value (PSV: PSV1, PSV2, PSV3, PSV4, PSV5), eco-friendly system value (EFV: EFV1, EFV2, EFV3, EFV4, EFV5, EFV7, EFV8,

EFV11). Dependent variable: Chinese consumers' consumption behavior (CB: CB1, CB2, CB3). The mediator: PRC consumers' attitude toward green furniture (ATT: ATT1, ATT2, ATT3, ATT4). Having fulfilled the prerequisite of the measurement model, the hypothesized structural relationships were systematically examined. Consequently, all constructs featuring seven hypotheses were chosen for testing, and the conceptual framework was operationalized into a testable format, as depicted in Figure 10.

Figure 10: Hypothesis model for goodness-of-fit testing

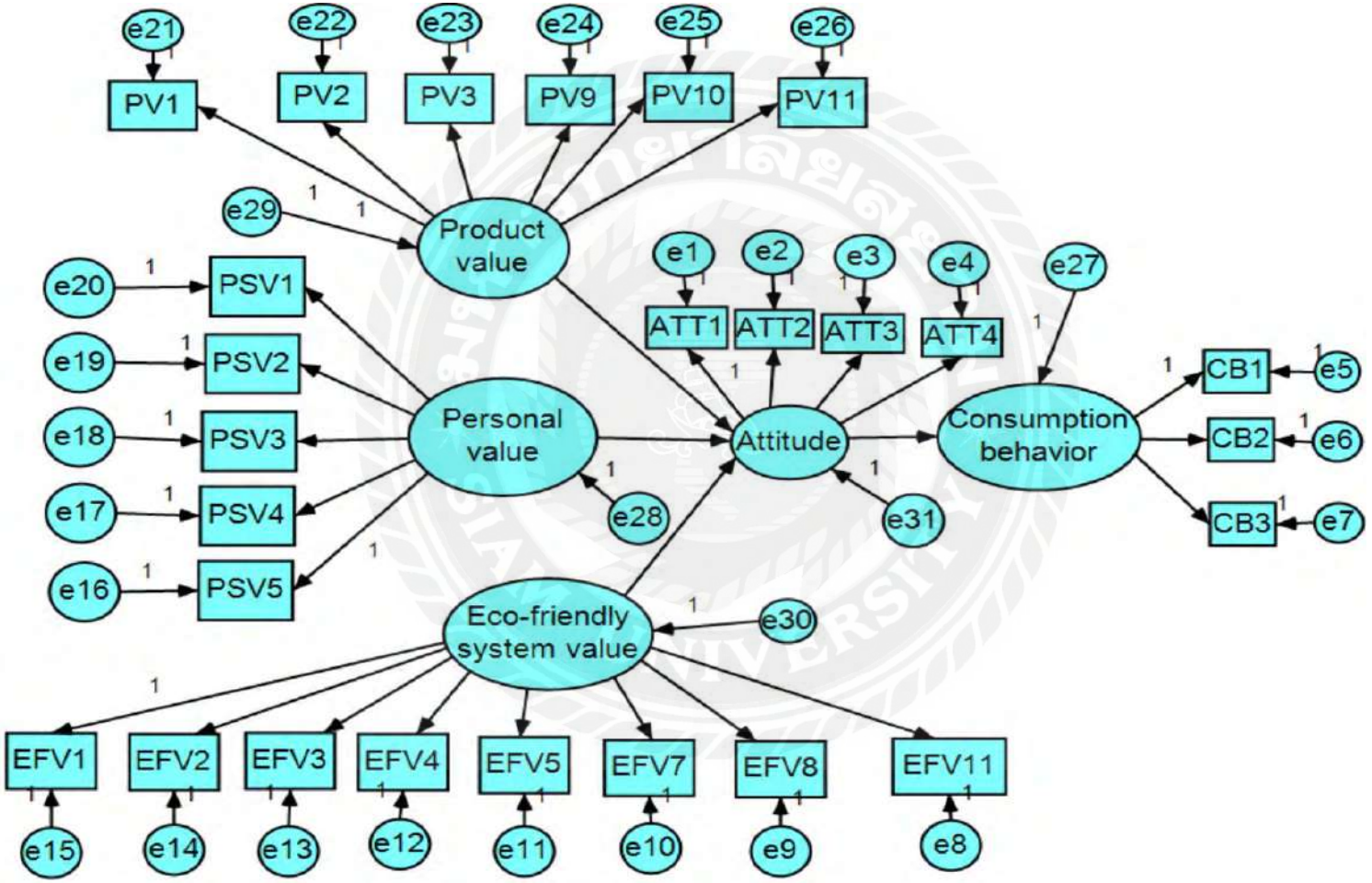


Table 20: Summary of structural paths and hypothesis testing results, standard estimates (n=832)

H	From	TO	Hypothesis model		
			Standardized regression weight: estimate	Z	P
H2a	PV	ATT	0.605	0.780	0.043
H2b	PSV	ATT	0.713	0.916	0.360
H2c	EFV	ATT	0.056	0.214	0.048
H3	ATT	CB	0.654	2.507	0.012
H4a	PV	CB	0.817	1.601	0.011
H4b	PSV	CB	0.160	3.514	0.016
H4c	EFV	CB	0.516	2.465	0.014
Model goodness-of-fit statistics			**Acceptable levels Criteria**	**Hypothesis model**	
Chi-square statistic			_	588.767	
df			>0	277	
CMINDF			<3	2.126	
p-value			>0.05	p=0.000	
GFI			>0.90	0.945	
AGFI			> 0.80	0.930	

Table 20: Summary of structural paths and hypothesis testing results, standard estimates (n=832) (Cont.)

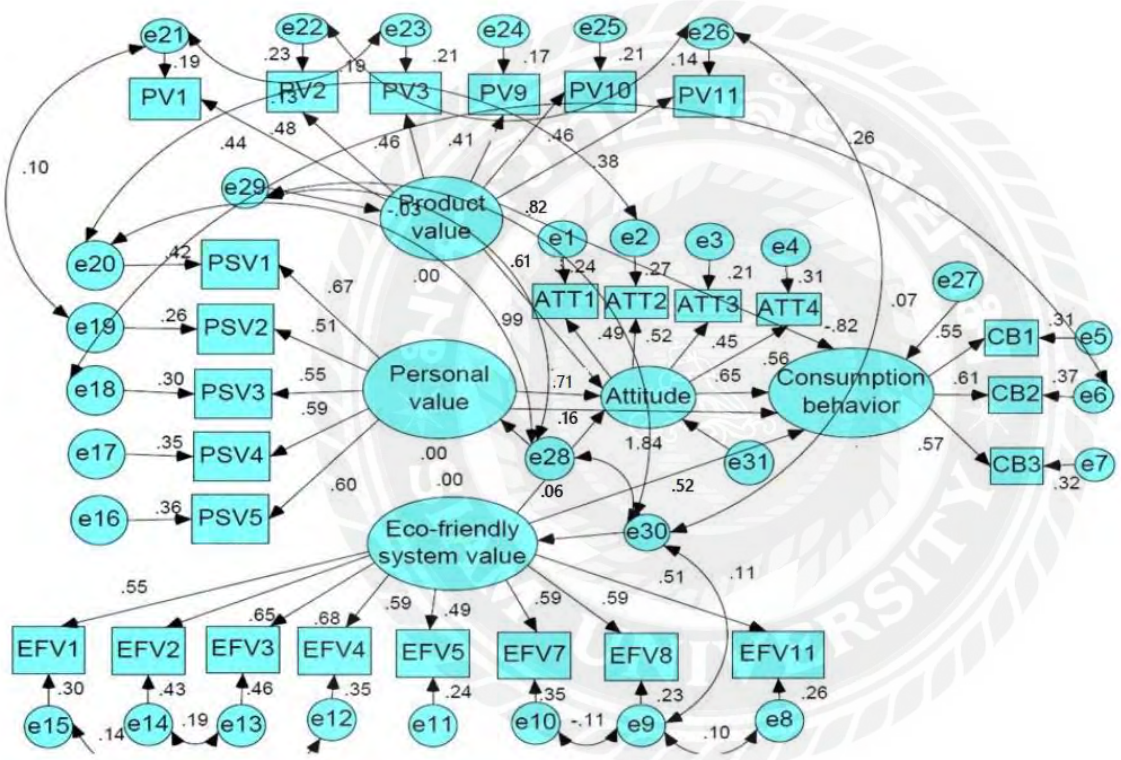
Model goodness-of-fit statistics	Acceptable levels Criteria	Hypothesis model
RMR	< 0.05	0.026
RMSEA	< 0.05	0.037
CFI	>0.90	0.947
IFI	>0.90	0.947
NFI	>0.90	0.905
TLI	>0.90	0.937
Note: *p<0.05, **p<0.01, ***p<0.001		

Within the structural equation modeling framework, the allowance for correlation between factors yielded a chi-square value of 588.767, with a p-value of 0.000, and 277 degrees of freedom. The presence of degrees of freedom greater than zero indicates that the number of specified paths in the model is less than the number of unique (non-redundant) sources of information. This signifies that the model can be estimated, and the fit of the model can be assessed. According to Kline (2023), a value of a relative chi-square index (CMIN/DF) equal to or less than 3 suggested adequate model fit. CMIN/DF was calculated by using a Chi-square value dividing the degree of freedom, in this model, the CMIN/DF ratio as 588.767/277 = 2.126, indicating a favorable fit of the current model to the data. Other model fit indices, including the Comparative Fit Index (CFI=0.947), Incremental Fit Index (IFI=0.947), Root Mean Square Residual (RMR=0.026), Root Mean Square Error of Approximation (RMSEA=0.037), Goodness-of-Fit Index (GFI=0.945), Adjusted Goodness-of-Fit Index

(AGFI=0.930), Normed Fit Index (NFI=0.905), and Tucker Lewis Index (TLI=0.937), all meet the suggested cutoff values by Kline (2023), with the exception of the statistically significant Chi-square value. However, because this study has seven out of eight indices that met the thresholds, considering the well-known sensitivity of the Chi-square test to sample size and there was a big sample size in this research. So, it is argued that this model fits the data empirically well (see Table 19).

Ultimately, the structural equation modeling of Chinese consumers' consumption behavior towards green furniture products in the new first-tier cities market was scrutinized and delineated in Table 20. The findings revealed the significance of three structural paths within the model. Specifically, one path, from personal value to consumption behavior, exhibited significance at $p<0.001$, while two other paths, namely attitude to consumption behavior and eco-friendly system on consumption behavior, demonstrated significance levels at $p<0.05$. Additional intricacies concerning the structural paths are expounded upon in the hypotheses testing section.

Figure 11: Standardized estimates results



Chi-square=588.767; df=277>0, p=0.000; RMSEA=0.037<0.05; RMR=0.026<0.05; GFI=0.945>0.90; AGFI=0.930>0.90, IFI=0.947>0.90, NFI=0.905>0.90; CFI=0.947>0.90; TLI=0.937>0.90; CMIN/DF=2.126<3.

Results of hypotheses testing

The proposed hypotheses were tested by: 1) H1 was tested by one-way ANOVA and independent T-test; 2) H2, H3, and H4 were tested using path analysis in AMOS version 22.0. The detailed hypotheses testing result for H1 can be explained in Table 21 to Table 25 which all factors filtered by the author are with the sig. (2 tail) < 0.05 in one-way ANOVA test and independent sample T-test.

Table 21: Result of ANOVA test (factor: city, n=832).

Dependent list / Mean / City	Product value	Personal value	Eco-friendly system
wuhan	**4.139**	**3.919**	**3.938**
xi'an	4.008	3.764	3.790
Hangzhou	**4.152**	**3.995**	**4.035**
chengdu	4.078	3.887	3.897
p-value (Sig.)	0.013	0.006	0.001

After testing all 3 observed variables for Chinese consumers' values (product value, personal value, eco-friendly system value), the author found that all three variables were significantly different toward to city factor as the p-value (Sig.) is less than 0.05.

For product value, Hangzhou customer believes it is one of the most substantial influence factors affecting their green consumption behavior compared to the other three cities. Besides product value, personal value and eco-friendly system value are also crucial to Hangzhou customers, this is followed by Wuhan which ranked in second place, and Chengdu which ranked in third place respectively, while Xi'an had the lowest scores on all three value aspects. When looking at each city, Wuhan customers treat product value as the most important influential factor, followed by eco-friendly system value. Xi'an customers also believe product value is the most important factor but tend to put more weight on eco-friendly system value than personal value. Chengdu customer argued that product value is the most significant factor influencing

their green furniture purchasing decision-making, followed by eco-friendly system and personal value. In short, the important factor ranking for all cities - Wuhan, Xi'an, Hangzhou, and Chengdu are the same which are product value was thought as the most important factor ranked in the first place, and eco-friendly system and personal value were ranked second and third place separately. The author also observed that Hangzhou customer gives relatively high scores when compared to the other three cities, and the scores for eco-friendly value and personal value are only slightly different for Wuhan and Chengdu customers which stand for customers from these 2 cities believe the importance of these 2 factors are very close to. Hangzhou customer gives the highest scores on all three value variables (product value mean =4.152, personal value mean = 3.995, and eco-friendly value mean = 4.035), followed by Wuhan average scores in this group for product value =4.139, personal value = 3.919 and eco-friendly system = 3.938. Customers from Xi'an have the lowest mean score on all three value variables with mean as product value =4.008, personal value = 3.764, and eco-friendly system = 3.790. According to the analysis, green furniture products have lower attraction on Xi'an customers when compared to customers from the other three cities, the extra analysis on Xi'an customers and more promotion focus on this group should be proposed and improved.

Table 22: Result of T-Test/ANOVA test (factor: sex and age group, n=832).

Dependent list / Mean / Sex	Eco-friendly system	Dependent list / Mean / Age group	Personal value
Male	**3.934**	15~29	3.814
Female	3.895	30~44	**3.966**
N/A	N/A	45~59	3.767
N/A	N/A	60 and above	3.838
p-value (Sig.)	0.006	p-value (Sig.)	0.005

As sig (2-tailed) =0.006 which is less than 0.05, that means males and females are different groups when comes to green furniture's eco-friendly value. The research needs to consider males and females as a different group when analyzing their consumption behavior toward green furniture products. The mean score from males is higher than females, which means males paid much more attention to eco-friendly system value factors than females. It was also found a significant difference when comes to age group factors toward personal value since p-value (sig.) = 0.005 which is less than 0.05. Customers in the age range 30-44 years old with the highest mean score of 3.966, showed that they care much more about personal value while customers who are 45-59 years old care the least about personal value with a mean score of 3.767. Surprisingly, customers aged 60 years and above also offer relatively high scores (mean = 3.838) on the personal value factor.

Regarding education level factors effects on product value, personal value, and eco-friendly system variables, since sig (2-tailed) is greater than 0.05 (product value mean = 0.187, personal value mean = 0.231 and eco-friendly system mean = 0.352), indicated that there is no significant difference on education factor groups on these three values lists when Chinese new first-tier cities consider buying green furniture. Thus, scholars may view people from various educational backgrounds as a single group when analyzing green furniture consumption behaviors for new first-tier city consumers (Chengdu, Wuhan, Hangzhou, and Xi'an), which contradicts the majority of past research findings.

Table 23: Result of ANOVA test (factor: income, n=832).

Dependent list / Mean / Income	Product value	Personal value	Eco-friendly system
Under 3000	3.877	3.623	3.630
3001-5000	4.107	3.873	3.902
5001-7000	4.109	3.884	3.933
Above 7001	**4.114**	**3.950**	**3.953**
p-value (Sig.)	0.001	0.001	0.001

Since p-value (Sig.) = 0.001 which is less than 0.05, the above four income groups are significantly different in product value, personal value, and eco-friendly system value. The income group with income above 7001 yuan has the highest mean score on all three values (product mean =4.114, personal mean = 3.950, eco-friendly system mean = 3.953). Followed by income group 5001-7000 yuan with product mean =4.109, personal mean = 3.884, eco-friendly system mean = 3.933 perspectivity. And income group under 3000 yuan with the lowest mean score with product mean =3.877, personal mean = 3.623, and eco-friendly system mean = 3.630. In short, customers with higher incomes treat all three factors product value, personal value, and eco-friendly system value as more important factors that will affect their green furniture purchasing decision-making. Product value with the highest scores compared to the other two factors for all four different income groups, followed by eco-friendly system value. However, there is very little difference between the group that has income above 7,001 yuan on eco-friendly system value (3.953) and personal value (3,950), this showed that this group treats eco-friendly system and personal value with almost the same level of importance. A positive influence was found between different income groups on these three value factors (product, person, and eco-friendly system value), which means the customer who has higher incomes is usually has higher desires and more satisfied with the values attributes of green furniture.

Table 24: Result of ANOVA test (factor: marriage status, n=832).

Dependent list / Mean / Marriage	Product value	Personal value	Eco-friendly system
Single and stay alone	4.067	3.762	3.811
Single and stay with parents	4.003	3.795	3.798
Married without children	4.059	3.749	3.813
Married with one child	**4.104**	**3.950**	**3.964**
Married with two or more children	**4.232**	**4.091**	**4.082**
p-value (Sig.)	0.016	0.000	0.000

As p-value (Sig.) < 0.05 among three variables (product value, personal value, and eco-friendly system value) showed in above table 20, these 5 marriage status groups were significantly difference. The number of children consumers has been positively related to the mean score they give to these three value factors, the more children a family has (separate group as family with one child and two or more children in this study) the higher score they will give to three value factors (product value, personal value and eco-friendly system value). Customers who have two or more children and customers with one child believe that it is important to attribute green furniture to these three factors. Except above 2 groups which are married with two or more children and married with one child ranked in the top one and top two, the third place ranked for product value is the group “single and stay alone”. For personal values, is group “single and stay with parents” which are ranked in third place. For the eco-friendly system, the group placed in third place is “married without children”. When looking inside each marital and family status group, the group “single and stay alone”, “single and stay with parents”, “married without children” and “married with one child” believes “Product value” and “Eco-friendly system” is important for them. Group “married with two or more children” believe that “product value” is the most important influential factor, followed by “personal value”. There is a relatively big difference between product value and eco-friendly system mean

(0.256) and product value and personal value (0.305) for the group "single and stay alone". This big difference also exists for the group "married without children" by showing that the mean score difference between product value and eco-friendly system is 0.246 while the mean score difference between product value and personal value is 0.31. In contrast, for the group "single and stay with parents" there is only a little difference (0.003) found in personal value and eco-friendly system, and for the group "married with two or more children" there is also only a slight difference (0.009) was found, these showed that these group of customers will treat them with almost same significant impacting their purchasing decision toward green furniture products. In short, all four martial groups' consumers treated product value as the most important factor when compared with the other two factors. Except for groups of marriages with two or more children, the other 4 groups ranked eco-friendly system as the second most important factor, while consumers who have two or more children believe that personal value is more important than eco-friendly system value on their green furniture consumption behaviors. Thus, one of the Chinese consumers' demographic attributes – marriage status was considered to have a significant influence on Chinese consumers' product value, personal value, and eco-friendly system value.

Table 25: Result of ANOVA test (factor: Organization to buy, n=832).

Dependent list / Mean / Organization	Product value	Personal value	Eco-friendly system
Chinese local-based enterprise	4.091	3.887	3.901
International based enterprise	4.122	3.920	4.002
Multinational based enterprise	3.985	3.982	4.182
p-value (Sig.)	**0.661**	**0.822**	**0.141**

In the test of significance among organization types to buy on product value, personal value, and eco-friendly system value factors, the p-value of 0.661 for product value, 0.822 for personal value, and 0.141 for eco-friendly system

value is greater than the significant alpha level set as 0.05; Thus, the null hypothesis, indicating no statistically significant difference among various types of organizations concerning Chinese consumers' value factors, is confirmed. This reveals that these 3 organization types exhibited almost the same effects on Chinese consumers' value factor when consuming green furniture products.

Regarding H2, H3, and H4, as previous parts have shown, the analysis showed a good structural model fit as the model fitness indices have achieved the desired cut-off criteria. Six out of seven structure paths in the model were statistically significant thus these hypotheses are accepted. One out of seven paths were statistically insignificant thus this hypothesis is rejected. The analysis revealed that product value exhibited a positive impact on attitude (β= 0.605*, $p<0.05$). Consequently, the hypothesis is accepted. Additionally, the analysis demonstrated a positive effect of eco-friendly system value on attitude (β= 0.056, $p<0.05$), supporting the corresponding hypothesis. Furthermore, evidence from the analysis indicated a positive influence of attitude on consumption behavior (β= 0.654*, $p<0.05$), affirming the hypothesis. Moreover, the analysis illustrated that product value is positively and significantly associated with consumption behavior (β= 0.817*, $p<0.05$), leading to the acceptance of the hypothesis. Additionally, the path analysis revealed a positive and significant association between personal value and consumption behavior (β= 0.160*, $p<0.05$), providing support for the hypothesis. Regarding to effects of personal value on attitude, as the p-value is statistically insignificant indicating that the hypotheses were not supported. Based on these results, we accepted the H2a, H2c, H3, H4a, H4b and H4c. We rejected H2b since the p-value is insignificant. The summarized structural paths and their corresponding estimates, along with the results of hypothesis tests, are presented in Table 26.

Two-tailed tests of significance were employed to assess the significance of each path coefficient. As anticipated, six out of seven hypotheses yielded statistically significant results and one out of seven hypotheses was rejected, the detailed significance of each path will be discussed in Chapter 5.

Table 26: Summary of structural paths, total effect, direct effect, indirect effect, and hypothesis testing results (n=832).

H	From	To	Hypothesis results				
			Total effect	Direct effect	Indirect effect	Hypothesis relation	Hypothesis support
H2a	PV	ATT	0.605*	0.605*	0.000	positive	Accepted
H2b	PSV	ATT	0.713*	0.713*	0.000	positive	Rejected
H2c	EFV	ATT	0.056*	0.056*	0.000	positive	Accepted
H3	ATT	CB	0.654*	0.654*	0.000	positive	Accepted
H4a	PV	CB	0.873*	0.817*	0.056*	positive	Accepted
H4b	PSV	CB	0.160*	0.160*	0.000	positive	Accepted
H4c	EFV	CB	0.543*	0.516*	0.027*	positive	Accepted
Note: *p<0.05, **p<0.01, ***p<0.001							

Mediation Testing

This part examines the mediates effects of attitude between Chinese consumers' values (product value, personal value, eco-friendly system value) and Chinese consumers' green consumption behavior. H2 and H3 are partial results of H5.

H5a: Attitude mediates the relationship between product value and consumption behavior

H5b: Attitude mediates the relationship between personal value and consumption behavior

H5c: Attitude mediates the relationship between eco-friendly system and consumption behavior

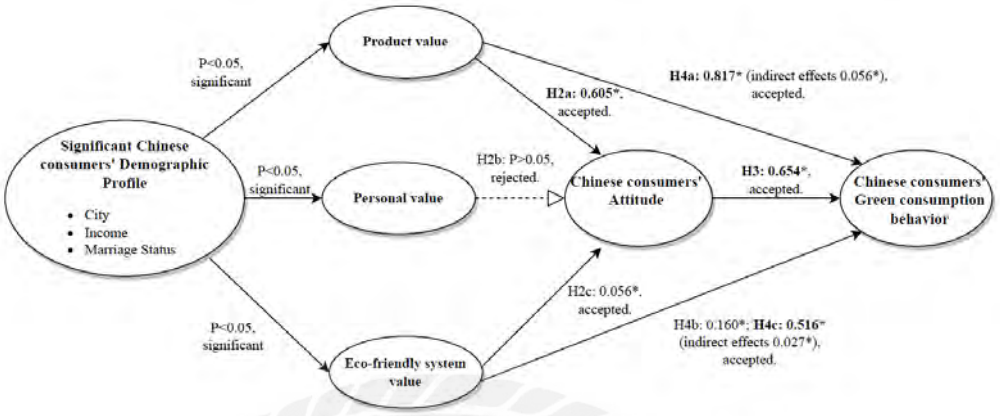
Table 27: Mediation analysis and hypothesis testing results (n=832).

H	Path	Total effects	Direct effects	Indirect effects	Remark
H5a	PV→ATT→CB	0.873*	0.817	0.056*	Hypothesis supported since indirect effects were statistically significant
H5b	PSV→ATT→CB	0.160*	0.160	0.000	Hypothesis rejected since indirect effects were statistically insignificant
H5c	EFV→ATT→CB	0.543*	0.516	0.027	Hypothesis supported since indirect effects were statistically significant

Note: *p<0.05, **p<0.01, ***p<0.001

The hypothesis results to check the mediating relationship among product value, personal value, eco-friendly system, and consumption behavior by pass attitude showed that attitude was partially mediating the relationship between product value and consumption behavior as indirect effects are statistically significant (β= 0.056, p<0.05). Furthermore, the attitude was also partially mediating the relationship between eco-friendly system value and consumption behavior (β= 0.027, p<0.05). Lastly, the attitude was considered not to have a mediation relationship between personal value and consumption behavior as indirect effects are statistically insignificant (β= 0.000, p=0.360>0.05). Based on these results, we accepted the H5a and H5c but rejected H5b. The outcomes of the direct paths within the structural model are succinctly presented in Figure 12 below.

Figure 12: Results of the direct path for the structural model (n=832).



Linear regression serves as a statistical method employed to ascertain the association between a dependent variable (also known as response or outcome) and one or more independent variables and a series of independent variables which are also known as explanatory (or predictor) variables. Simple linear regression is employed when there is one independent variable (predictor) and one dependent variable. (Altman & Krzywinski, 2015). In contrast, multiple linear regression concerns two or more independent variables. The linear regression analysis was employed to forecast the value of a dependent variable predicated on the values of explanatory variables. The dependent variable and independent variables are supposed to be correlated and this relationship can be explained by the linear equation. In Chinese consumers' values perception toward the green furniture consumption behavior model, it was estimated that Chinese consumers' values which included product value, personal value, and eco-friendly system value had influences on attitude and their consumption behaviors. The 0.605 equations can be illustrated in Figure 13 and Figure 14.

Figure 13: Chinese consumer's attitude =1.018 + 0.605 (product value) + 0.713 (personal value, rejected) + 0.056 (eco-friendly system value); R^2=0.383 (38.3%).

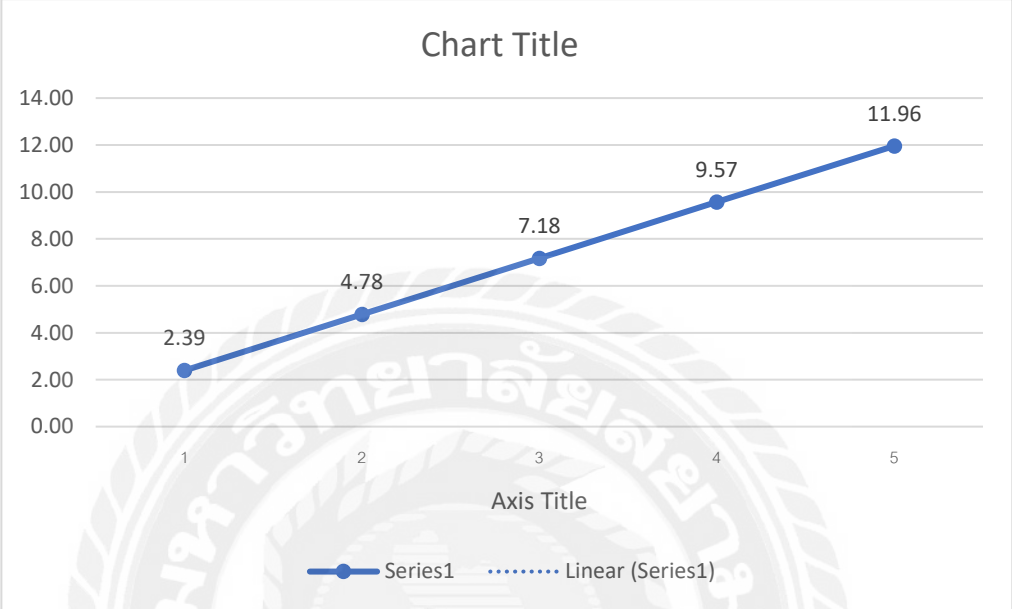
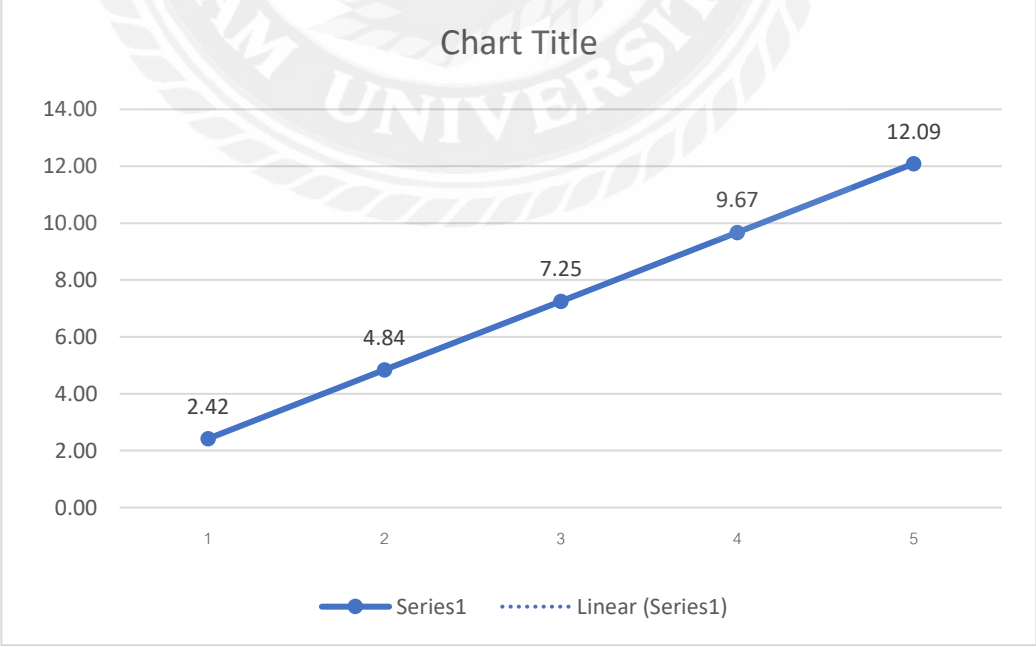


Figure 14: Chinese consumer's green consumption behavior = 0.842 + 0.873 (product value) + 0.160 (personal value) + 0.543 (eco-friendly system value); R^2=0.32 (32%).



Conclusion

This chapter delineated the intricacies of the data analysis processes and research results of the conceptual model and its associated hypotheses. It underscored specific details of the measurement model, elucidating the step-by-step procedures that yielded satisfactory measurements of the five constructs within the conceptual model. Additionally, the chapter expounded upon the final structural model, highlighting its favorable fitness as indicated by the adherence of most goodness-of-fit indices to the prescribed cutoff values.

The hypotheses model employed in this study demonstrated a satisfactory fit to the data, with six out of seven structural paths depicted in the model achieving statistical significance. Product value and eco-friendly system value were found to have a positive impact on attitude while personal value had no effects on attitude. Attitude, product value, personal value and eco-friendly system value had positive effects on consumption behavior when the Chinese consumer made a green furniture consumption decision. Furthermore, attitude mediated the relationship between product value, eco-friendly system value and consumption behavior. However, no mediating relationship was observed between personal value and consumption behavior through attitude. A more detailed discussion of the data analysis will be provided in Chapter 5, followed by an exploration of academic and managerial implications, as well as research limitations.

CHAPTER 5

Summary, Discussion and Recommendation

This chapter summarizes prominent research findings about the research objectives. It discusses these findings with prior research in the literature review part of Chapter 2. The chapter also presents the study's theoretical and practical contributions. Next, it discusses the study's limitations. Finally, it suggests recommendations for this study and future studies.

Research issues and hypotheses testing conclusions

Despite of increasing demand for green products field in recent years globally, there is still limited research examining the effects of a comprehensive set of customer values on attitude and consumption behaviors from an internal personnel empirical perspective in specific green furniture products section in PRC's new first-tier cities market. To fill these knowledge gaps, this study sought to examine the significant differences in Chinese consumers' various demographic attributes, identify the prominent green Chinese values that affect their consumption behavior, and investigate attitude's mediation effects between Chinese consumers' values and their consumption behaviors toward green furniture products in four PRC's new first-tier cities market named Wuhan, Xi'an, Hangzhou, and Chengdu. The summary of the salient findings of this study is as follows:

According to 832 questionnaires acquired by the researcher during June to July 2023, the demographic characteristics of Chinese consumers purchasing green furniture products in the new first-tier cities market are as follows: female consumers take a slightly higher proportion as 484 respondents account for 58% of all respondents. Middle-aged consumers (30-44 years) with 423 respondents account for over half proportion (51%) of all consumers. Most of them 683 respondents (82%) are in the undergraduate education background. 375 respondents (45%) had a monthly income of more than 7,001 yuan. In terms of marital and family status, approximately half of 414 respondents (50%) are married with one child. This is consistent with China's new normal social

phenomenon - elderly-devouring young adults and low birth rate. 761 respondents (92%) prefer to purchase green furniture from a Chinese local enterprise.

According to ANOVA and independent T-Test results, the various PRC consumers' demographic attributes are significantly different from green furniture's value factors. Customers from different cities named Wuhan, Xi'an, Hangzhou, and Chengdu have different demands on various values. Hangzhou obtained the highest mean score on all values (product, personal, and eco-friendly system) with 4.15, 4.0, and 4.03 separately while Wuhan ranked in second place with mean scores of 4.14, 3.92, and 3.94 respectively. This showed that Hangzhou customers with the highest expectations and demand for green furniture, indicating that green furniture enterprises have an appealing opportunity to enter the Hangzhou market. The second market with big development potential in the green furniture section is Wuhan. Both Hangzhou and Wuhan customers perceived product value as the most significant, followed by personal value and then the eco-friendly system. Therefore, to attract targeted customers in these 2 markets, green furniture enterprise marketers should continue to focus on improving the product value which relates to functional, health, and service aspects, then pay attention to personal value which is relevant to epistemic and emotional value aspects. Finally, focusing on eco-friendly system values which related to social and environmentally friendly aspects and implementing new innovative technology can increase green furniture's competitiveness. Surprisingly, male was found to have a bit higher mean score than females on eco-friendly system value, they obtained 3.93 and 3.89 respectively indicating that males believe that good impression and other social values (social identity, image, approval), ecology, and application of new technology is quite important for them. Middle-aged consumers who are 30-44 years old take personal value related to novel information and knowledge acquired and positive feelings as the most important factor. Consumers with high income expect more on three value factors of green furniture products by

showing a mean score of 4.11 on product value, 3.95 on personal value, and 3.95 on eco-friendly system value separately. This showed that consumers with high income (7,000 yuan and up in this study) are more inclined to engage in the purchase of green furniture and they ranked the product's value attributed as product value, eco-friendly system, and personal value. So, marketers should treat customers with higher incomes as target customers and try to improve green furniture's product value which relates to its utility, health, and service aspects because consumers have the highest demand for these valuable attributes. Eco-friendly system value is also important for them and ranked second place, thus, collaborating with the government and other organizations to increase the propaganda of green products and from the mainstream cultural orientation to consume green products in entire society is also important. Furthermore, green furniture products ought to consider personal values, such as providing novel information and knowledge and arousing customers' positive feelings. Customers with various marital and family statuses showed different significance on value factors. Consumers who are married and with two or more children expect more on product value, personal value, and eco-friendly system value with mean scores of 4.23, 4.09, and 4.08 respectively. Followed by consumers who are married and with one child with a mean score of 4.10 on product value, 3.95 on personal value, and 3.96 on eco-friendly value. This result indicated that parents are more willing to purchase green furniture than single consumers, parents with two or more children have a higher demand for green furniture products than parents who have only one child. Product value which is related to product functional, health, and service aspects is the most significant factor for both groups of parents. Personal value was placed second by parents with more than two children, and eco-friendly system value was ranked third. Parents with only one child, on the other hand, placed eco-friendly system value second and personal value third. In brief, parents with two or more children believe personal value which is related to novel knowledge desire, and emotional feelings is more important than eco-friendly systems which are mostly related to

social, environmental, and technological aspects, while parents have one child believe that eco-friendly systems are more important than personal value. In this study, the researcher did not find any empirical support for a significant difference in education and organization types, which means that regardless of what education level PRC consumers have or which organization types they bought green furniture from, they had the same perceptions of the value factors (product, personal, and eco-friendly system). Significant Chinese consumers' values for demographic profile can be summarized as follows:

Table 28: Significant Chinese consumers' values for demographic profile

Chinese consumer's demographic profile	Product value	Personal value	Eco-friendly value
City			
Wuhan	√		
Xi'an	√		
Hangzhou	√		
Chengdu	√		
Gender			
Male			√
Female			
Age group			
15~29			
30~44			√
45~59			
60 and above			
Income			
Under 3000	√		
3001-5000	√		
5001-7000	√		
Above 7001	√		
Note: √ the most significant values.			

Table 28: Significant Chinese consumers' values for demographic profile (Cont.)

Chinese consumer's demographic profile	Product value	Personal value	Eco-friendly value
Marriage Status			
Single and stay alone	√		
Single and stay with parents	√		
Married without children	√		
Married with one child	√		
Married with two or more children	√		
Note: √ the most significant values.			

When comes to observing variables that are used to measure product value in the final filtered model, PV11 stated that a long guarantee time may enhance green furniture consumption and obtained the highest mean score of 4.26, followed by PV1 claimed that eco-friendly furniture is of premium quality mean score of 4.24, these 2 observed variables are strongly agreed by Chinese consumers ($\bar{X}$=4.21-5.00). PV10 which describes the cordial service relationship of the company's employees and can lead to a re-purchase of green furniture products ranks in third place with an $\bar{X}$ = 4.07 representing that this aspect is agreed by Chinese consumers ($\bar{X}$ =3.41-4.20). This result showed that service aspects of green furniture like the promised guarantee period and cordial service from the enterprise's employees are significant to customers. From the viewpoint of principal component analysis that can show how strong the relationship between the item and the component in the solution, PV1 "the eco-friendly furniture is of premium quality" loads the highest on the component with a λ = 0.52, followed by PV2 "the eco-friendly furniture is durable" with a λ = 0.44 on the component. This indicated that functional characteristics such as quality and

durability continue to remain in basic demand among consumers.

Regarding observed variables to measure personal value, PSV2 stated that customers believe that green furniture is beneficial to themselves and people around got the highest mean score showing an agreed level ($\bar{X}$ = 4.18). Followed by PSV3 which claimed that customers will recommend green furniture to their friends or family with a mean score of 3.98 which shows Chinese consumers agree with this statement as well ($\bar{X}$ = 3.41-4.20). From the viewpoint of principal component analysis that can show how strong the relationship between the item and the component in the solution, PSV4 "green furniture can satisfy customer's demand" loads the highest on the component (λ= 0.625), followed by PSV3 "customer recommend green furniture to their friends or family" (λ=0.608) on the component. This indicates that Chinese consumers are aware of the benefits of consuming green furniture, they expect green furniture products can satisfy their needs and tend to recommend green furniture to people around them.

When comes to observing variables to measure eco-friendly system value, EFV5 stated that ecology is a reason to switch products achieved the highest mean score of 4.08, followed by EFV8 application of new technology increases its attractiveness, then followed by EFV7 claimed that purchasing green furniture is an important aspect of making a social contribution to saving the earth. EFV11 the innovative technology that facilitates green furniture purchasing also got a relatively high mean score ($\bar{X}$=4.0), all above mentioned observed variables showed an "agree" level because its $\bar{X}$ = 3.41 to 4.20. This result indicated that Chinese consumers have an environmentally friendly consciousness, and this is a reason for them to switch the product, thus, green furniture products with eco-friendly attributes are more competitive when compared to conventional furniture products. From the viewpoint of principal component analysis, EFV2 "green furniture could contribute to improving social image" loads the highest on the component with a $\lambda = 0.598$, followed by EFV1 "buying green furniture is to conform with pro-environmental social identity" with a $\lambda = 0.59$ on the component. This shows that purchasing green furniture

is also viewed as an important aspect to conform social identity, improving the social image, and making a social contribution to saving the earth. Besides these, new and innovative technology was anticipated to increase green furniture's attractiveness and facilitate its purchasing. In brief, eco-friendly system value, especially ecology and technology dimensions, are important value factors that green furniture products should have to attract customers and also enhance their consumption.

Regarding observing variables used to measure attitude, ATT3 "buying green furniture is awesome" got the highest mean score of 4.23 showing a "strongly agree" level ($\bar{X}$ =4.21-5.00). Followed by ATT1 "customers are aware that green furniture is relevant to them and arouse to their interests" with a mean score of 4.06, this observed variable shows an "agree" level. From the viewpoint of principal component analysis that can show how strong the relationship between the item and the component in the solution, ATT4 "customers are inclined to switch to green furniture products" loads the highest on the component with a $\lambda = 0.59$, followed by ATT2 "customers can distinguish green furniture form conventional furniture" with a $\lambda = 0.49$ on the component. This result demonstrated that Chinese consumers realized that green furniture relates to their daily lives and this kind of product has aroused their interest. The solution to PRC consumers' attitude toward green furniture products should focus on how to make them switch from traditional furniture to green furniture and what measurements takes to make consumers easily distinguish between green furniture and conventional furniture. Overall, PRC consumers exhibited a positive attitude toward green furniture by describing purchasing green furniture as awesome.

Regarding observing variables used to measure Chinese consumers' consumption behavior, CB3 "customers intend to re-purchase green furniture in the future" obtained the highest mean score of 4.25 representing a "strongly agree" level ($\bar{X}$ = 4.21-5.00). Followed by CB1 "customers are willing to purchase green furniture" with an $\bar{X}$= 4.11 showed a "agree" level ($\bar{X}$ =3.41-

4.20). From the viewpoint of principal component analysis that can identify how strong the relationship between the item and the component in the solution, CB3 "customers intend to repurchase green furniture in the future" loads the highest on the component with a factor loading value of 0.69, followed by CB1 "customers are willing to purchase green furniture" with a $\lambda = 0.54$ on the component, and CB2 "customers would recommend green furniture to their friends and family" with a $\lambda = 0.53$ which is good in practice as well. This result implies that Chinese consumers have a strong willingness to purchase green furniture not only at the current time, they show an even stronger willingness to re-purchase green furniture products shortly, which may reveal the huge development potential of green furniture products in PRC's new first-tier cities.

When examining structural paths and hypothesis testing results, a p-value of H2b "personal value has a positive effect on attitude" with $p = 0.36$ which is greater than the significant alpha value set as 0.05, leading to the rejection of the hypothesis. All the rest of the hypothesis proposed in the model was accepted. H4a "product value had a significant positive effect on consumption behavior", with a $\beta = 0.82$, followed by H3 "attitude had a strong positive influence on consumption behavior", with a $\beta = 0.65$. This indicated that product value related to the product's utility, health, and service aspects are basic requirements from customers. Moreover, the mediation effects of attitude between product value, and eco-friendly system value on consumption behavior were supported by showing an indirect effect as 0.056 and 0.027 perspectivity. However, the hypothesis stated the mediation effects of attitude between personal value and consumption behavior was rejected since indirect effects were statistically insignificant. The results of the direct paths within the structural model are articulated in the subsequent table:

Table 29: Results of the direct path for the structural model (n=832)

Hypothesis	Path	Standard coefficient	p-value	Decision
H2a	Product values → Attitude	0.605	0.000	**Accept**
H2b	Personal values → Attitude	0.713	0.360	Reject
H2c	Eco-friendly system → Attitude	0.056	0.000	Accept
H3	Attitude → Consumption behavior	0.654	0.012	**Accept**
H4a	Product values → Consumption behavior	0.817	0.001	**Accept**
H4b	Personal values → Consumption behavior	0.160	0.000	Accept
H4c	Eco-friendly system → Consumption behavior	0.516	0.014	**Accept**
Note: $\chi 2$ (832) =588.77, $p<0.05$), CFI=0.947, TLI=0.937, RMSEA=0.037, GFI=0.945				

Discussions

One of the primary objectives of this study was to examine the demographic characteristics (city, gender, age group, education level, income, marriage status, and organization to buy) of Chinese consumers who purchase green furniture.

Chinese consumers' demographic profile included 7 measurement variables, and the study results showed that 5 demographic factors (city, gender, age group, income, marriage status) indicated agreeable levels (Table 21-25, pages 106-111) and also indicated significant influence on Chinese consumer's value factors (product value, personal value, eco-friendly system value) while two of these measurement variables (education level, organization type) are not significantly different among various PRC Chinese consumer groups. According to the concurrent research findings, Chinese consumers believed that 3 demographic factors (city, income, and marriage status) are strongly connected with Chinese consumers' perceived values. Hangzhou and Wuhan customers with relatively high mean scores when compared to the other two cities (Chengdu and Xi'an), this indicates that there are high potential market opportunities for green furniture products in these 2 cities – Hangzhou and Wuhan. Furthermore, customers with higher incomes obtained higher $\bar{X}$ on all

three value factors, which means that there is a positive association between income and Chinese consumers' perceived values toward green furniture products. This is in line with previous studies that argued that income level has a positive influence on eco-friendly behavior (Giang & Tran, 2014). In other words, the more consumers earn, the more likely they perform environmentally friendly actions. Additionally, marital status was also found as one of the most essential factors influencing Chinese consumer's perceived values. Married consumers with two or more children and those who are married with one child exhibited a positive and notably significant impact on the value factors. The former group who is married with two or more children has a higher mean score than the latter who is married with one child (Table 24, page 110), indicating that these two groups have a high demand for green furniture products when compared to other marital status consumers, noticeably marketers might consider these two groups as target consumers with a high potential to contribute to the growth of the green furniture market. This result supported prior research findings that married couples and parents are more environmentally conscious than single consumers and are willing to consume eco-friendly products (Wan, Toppinen & Chen, 2014; Shahsavar, Kubeš & Baran, 2020).

Product value

Product value (PV) comprised 6 measurement variables, and the findings of the study indicated that the perceived product values reached agreeable levels (Table 19, page 98). From the perspective of factor loadings, Chinese consumers believed that green furniture is of premium quality ($\lambda = 0.521$), cordial service relationship ($\lambda = 0.439$) and beautiful design ($\lambda = 0.434$), promised guarantee ($\lambda = 0.431$) (Table 19, page 98) are closely connected with product value. These results are similar to those reported by Gonçalves, Lourenço & Silva (2016) and Han, Wang, Zhao & Li (2017) who argued that product value is a decisive factor that has a significant influence on consumer's attitude and their purchase decisions. Moreover, service is one of the product value attributes that have positive effects on consumer satisfaction and then further influences consumer

consumption behavior and re-purchase intention (Hsu, Huang, Hsu & Huang, 2016). Eco-friendly furniture is durable (λ = 0.40) and regularly updated on the logistic process (λ = 0.40) got a relatively low connection with product value in Chinese consumer's standpoints, however, it is still at an acceptable level as the threshold was set as 0.40 in this study. This might be because Chinese consumers have started more attention to some emerging perceived values, such as environmental friendliness, new technology applications, emotional values., etc., this may lead to a decrease in the significance of traditional value factors (e.g. durability). Some consumers don't need furniture enterprises to update them on the logistic status of green furniture they purchased, however, they buy regularly as they may treat these messages or phone calls as junk messages that brother their daily life or occupy their mobile phones or email storage space in case of the green furniture products can arrive on their hands as promised time. They may focus more on whether the furniture product can truly benefit the environment and their health purpose rather than updating the logistics status regularly.

Personal value

Personal value (PSV) comprised 5 measurement variables, the finding of this study showed that green furniture can satisfy customer's demand (λ = 0.763), the customer will recommend it to their friends or family (λ = 0.608), green furniture can arouse customer's positive feelings (λ = 0.565), a great deal of new and novel information about green furniture was acquired (λ = 0.558) and customer believe that green furniture is beneficial to themselves and people around them (λ = 0.498) are all agreed by Chinese consumers. The first two measurement variables demonstrated that Chinese consumers have high recognition and acceptance of green furniture products. The result supported a previous study that has been recognized for green furniture products in recent years (Xu, Wang & Yu, 2020). Emotional and epistemic values which as important dimensions of personal value are essential parts of consumption behavior that consumers would evaluate when consuming green products (Lin

& Huang, 2012; Gonçalves, Lourenço, & Silva, 2016), this becomes more crucial when promoting green products in emerging markets (Khan & Mohsin, 2017). Despite the positive and significant influence of personal value on Chinese consumers' green choice behavior, there is no significant effect was found between personal value and Chinese consumer's attitudes toward green furniture products in this study. Although the concept of green furniture has become more popular over the years, customers have gradually become more conscious of health and environmental issues. However, consumers are still confused about what exactly is green furniture and how to identify its authenticity. As asserted by Cheung & Prendergast (2006) and Qin, Shi, Song, Stöttinger & Tan (2018), the prevalence of counterfeit green furniture is widespread in the PRC furniture market. These counterfeit green furniture in turn affects Chinese consumer's emotional value and their attitude toward green furniture products. Improving the current scenario requires that green furniture manufacturers, policymakers, industry associations, third-party testing organizations, and other relevant practitioners must more clearly clarify industry regulations and develop practical measures to make it simple and easy for consumers to recognize and identify authentic green furniture.

Eco-friendly system value

The Eco-friendly System Value (EFV) was assessed through the examination of eight measurement variables. The findings of the study revealed that all eco-friendly system values exhibited a level of agreement (Table 19, page 98). From the perspective of the factor loading, Chinese consumers believe that green furniture would help to improve their social image ($\lambda = 0.598$), buying green furniture to conform to pro-environmental social identity ($\lambda = 0.594$), green furniture purchase would create a good impression on friends and family ($\lambda = 0.569$), social approval is an important motivator on green furniture consumption ($\lambda = 0.564$), purchasing green furniture is an important aspect of making a social contribution to saving the earth ($\lambda = 0.518$) (Table 19, page 98), all are strongly connected with eco-friendly system value. The relatively high

factor loading aforementioned represented the importance of these factors in eco-friendly system value. Notably, four out of five talked about social value and one of them mentioned saving the earth from an environmental protection perspective. This result supported a previous study that consumer choice behavior for green products is positively influenced by both social value and environmental value (Biswas & Roy, 2015; Gonçalves, Lourenço & Silva, 2016). The Chinese consumer is concerned about self-image improvement in society and become more and more environmentally conscious nowadays. By contrast, ecology is a reason to change the product ($\lambda = 0.498$), the innovative technology facilitates green furniture purchasing ($\lambda = 0.482$), and the application of new technology in green furniture products boosts its attractiveness ($\lambda = 0.471$) obtain a relatively low connection with eco-friendly system value although there is still a connection there. This is perhaps because Chinese consumers are environmentally conscious. Individuals, however, do not exhibit a sufficiently resolute inclination to choose alternative products just for environmental reasons; rather, their consumption decisions should be based on a set of comprehensive values. Regarding the implementation of new technology, while Chinese consumers have become aware of some technologies through media (e.g., newspapers, websites, TV, and social media), green furniture enterprises and marketers have not yet begun widely and fully adopting these innovative technologies toward green furniture products. Therefore, consumers may not be able to touch these technologies closely in their daily lives, this may lead to them having just a vague grasp of what these technologies are and how they can benefit them during their consumption process.

Chinese consumer's attitude

The construct of attitude value comprises four measurement variables, and the study results indicated a strong consensus among Chinese customers in favor of the assertion that "customers are inclined to switch to green furniture products (ATT4)" with a $\lambda = 0.586$ which represented the significance of this factor in attitude, while the rest of the three variables are with relatively low

factor loading by showing that "customers can distinguish green furniture from conventional furniture" with $\lambda = 0.488$, "customers are aware of green furniture is relevant to them" and "arouse to their interests" with $\lambda = 0.479$ and "buying green furniture is awesome" with $\lambda = 0.435$ perspectivity (Table 19, page 98). The respondents agreed with PRC's new first-tier cities' consumers showing a big interest and willingness to purchase from conventional furniture to green furniture. This is in line with previous studies indicating that green furniture has become more and more popular in recent years and there is an increasing demand for green furniture products. Furthermore, various consumption values may exert a significant influence in fostering favorable attitudes and affecting consumer's behavioral intention toward green products (Phillips, Asperin & Wolfe, 2013).

Chinese consumers' green consumption behavior

Chinese consumers' green consumption behavior (CB) included 3 measurement variables. There is a notable inclination among Chinese consumers to strongly endorse the statement "Customers intend to repurchase green furniture in the future," as evidenced by a substantial factor loading of 0.688 (Table 19, page 98) which represents its significance on consumption behavior. The other two measurement variables "customers are willing to purchase green furniture" and "customers would recommend green furniture to their friends and family" are also at an agreeable level but with a relatively low factor loading. "Customers are willing to purchase green furniture" obtains $\lambda = 0.537$, and "customers would recommend green furniture to their friends and family" with $\lambda = 0.531$ which shows less importance when compared with re-purchasing behavior. However, given that the λ values of these 2 factors exceeded the threshold of 0.4, indicating that it pertains to consumption behavior. Chinese consumers showed a favorable attitude when they purchased green furniture and it exerted a positive influence on Chinese consumer's choice behavior ($\beta=0.65$, $p<0.05$). This study found that consumer consumption behaviors can be predicted by attitude which is consistent with previous studies (Zhao, Gao, Wu,

Wang & Zhu, 2014). If a customer has a positive attitude toward green furniture products, they will have a higher possibility willing to purchase, recommend and repurchase them. This result strongly supported previous studies that types of value factors can influence consumers' attitudes toward green products, and attitudes in turn affect their consumption behaviors (Choe & Kim, 2018).

Hypotheses testing

The second objective of the current research was to examine the value factors that influence Chinese consumer's consumption behavior (willingness to buy, willingness to recommend, willingness to re-purchase green furniture) and analyze the mediating effect of attitude (cognitive, affective, conative) in the relationship between Green Chinese values (product value, personal value, eco-friendly system value) and to consumption behavior. Then finally present and develop the Chinese consumer's value-attitude causal model which enhances its green furniture consumption behavior in the new first-tier cities' Chinese market. H1 was tested by one-way ANOVA and independent T-test analysis, and all rest of hypotheses H2, H3, and H4 were subjected to examination through the application of structural equation modeling methodology. The findings revealed that demographic variables such as city of residence, gender, age group, income, and marital status exert a significant influence on the perceived values of Chinese consumers. In addition to Hypothesis H1, the elucidation and formulation of several hypotheses (H2 to H4) were undertaken to substantiate the testing of the model and address the research questions.

As the p-value of 0.360 for personal value on attitude (H2b) is greater than the significant alpha level set as 0.05; Hence, this hypothesis is rejected. In other words, there are no positive influences that personal values (epistemic and emotional) have on Chinese consumers' attitudes. With the exception of H2b, all other hypotheses investigated in the study exhibited statistical significance in the anticipated direction. The findings indicate that attitude is positively influenced by product value (β= 0.605*) and eco-friendly system (β= 0.056*). Moreover, Chinese consumers' green consumption behavior is positively influenced by

attitude (β= 0.654*), and consumption behavior is positively affected by product value (β= 0.817*), personal value (β= 0.160*), and eco-friendly system (β= 0.516*). Acting as a mediator, attitude positively influences consumption behavior with respect to product value (β= 0.056*) and eco-friendly system (β= 0.027*) (Table 22, page 107). The outcomes of the hypotheses testing are discussed individually, along with their respective implications as follows：

H1: Demographic characteristics (city, sexual identity, age range, education level, income, marital status, organization to buy) have positively affected influence on Green Chinese values.

The demographic characteristic of Chinese consumers has a positive influence on their green values were partially supported. The demographic attributes of the city, gender, age group, income, and marital status of Chinese consumers have a significant influence on their perceived values while education level and organization to buy are insignificant. Among these demographic characteristics, city, income, and marital status are significantly different in all three Chinese consumers' values (product, personal, and eco-friendly system) indicating that these three demographic attributes should be paid more attention by businesses when conducting segmentation strategies to enhance consumer perceptions of green furniture products. Overall, Hangzhou consumers with the highest $\overline{X}$ = 4.152 for product value, 3.995 for personal value, and 4.035 for eco-friendly system value, followed by Wuhan which suggests that these 2 markets maybe with big potential market opportunity for green furniture products. Income was found to have positive significant effects on Chinese consumers' values, consumers with higher income are more likely to purchase green furniture products. This result is in line with previous findings that income level is positively related to consumer's eco-friendly behavior (Giang & Tran, 2014). The consumer's marital status is also an important factor that will influence Chinese consumers' values, this study found that consumers' marital status and the number of children have a positively significant influence on Chinese consumers' value factor. Consumers who are married and have one or two

children will more likely perform green furniture consumption behavior. This result is in line with Wan, Toppinen & Chen's (2014) research argued that married couples and parents are more environmentally conscious than single-status consumers. One unanticipated result was that there is no significant relationship was discovered between education level and consumer's perceived values, while some previous research claimed that individuals with higher levels of education are usually more eco-friendly and more likely to perform green consumption behaviors (Chekima, Wafa, Igau, Chekima & Sondoh Jr, 2016). The finding of this study, however, are consistent with Baran's (2020) argument that education has essentially no influence on consumers' intention to purchase and willingness to pay premium prices for green furniture. This may be because most Chinese consumers have the motivation to purchase green furniture. Therefore, no matter what the education level is, consumers in the PRC are likely to buy it. On the other hand, as their sense of national pride rose along with the improved quality of domestically made products, which impacting the demand for imported products decreased. This might be because consumers are frequently unable to distinguish between foreign and domestic brands, and consumers in first-tier cities (e.g., Beijing, Shanghai, and Guangzhou) prefer foreign brands when purchasing consumer electronics and luxury goods. This discrepancy, however, may be less prominent in the consumption of green furniture products among customers in PRC's new first-tier cities, which is the subject of this research.

H2: Green Chinese values have positively affected Chinese consumers' attitudes.

H2a: Product values (functional, health, and service) have positively affected Chinese consumers' attitudes.

The influence of product value on the attitudes of Chinese consumers is positively substantiated (β= 0.605*), aligning with anticipated outcomes. The investigation demonstrated a noteworthy positive impact of product value on Chinese consumers' attitudes concerning the consumption of green furniture.

This finding aligns with prior research, specifically supporting the notion that product value, with a focus on perceived utility, constitutes a pivotal determinant influencing consumer choice behavior (Gonçalves, Lourenço & Silva, 2016). Product value is the benefits the product offers to the consumers, and the utility attributes such as comfortability, durability, and high quality are closely related to the consumer's basic demand. If a product fails to satisfy consumers' needs in functional, health, and service product value aspects, it may bring challenges to the enterprise's marketing strategy. Therefore, product value must be improved to encourage consumers' sustainable consumption behavior.

H2b: Personal values (epistemic and emotional) have positively affected Chinese consumers' attitude.

The present study did not provide support for Hypothesis H2b "personal values (epistemic and emotional) have positively affected Chinese consumers' attitude" (β= 0.713, p=0.360 >0.05). As p-value of personal value on Chinese consumers' attitude is 0.360 which is greater than the significant alpha level set as 0.05; thus, confirming the null hypothesis that there is no positive influence of personal value on Chinese consumers' attitude, which was unexpected. This result diverges from prior research findings, which have indicated that personal value, encompassing both epistemic and emotional dimensions, serves as a significant advantage in shaping consumer attitudes and fostering engagement in their green consumption behaviors (Rahnama & Rajabpour, 2017).One of the possible reasons leading to this result might be that consumers are still not confident about the authenticity of green furniture products in the market. According to Lin & Huang (2012), the three most common reasons that PRC consumers do not buy green products are: 1) they are not sure whether the green products they bought are truly authentic green products or not (48%); 2) they don't know about green products and lack of green products knowledge (25%); 3) they don't know where they can access to green products (22%). Qin, Shi, Song, Stöttinger & Tan (2018) further indicated in their study that counterfeit green furniture is prevalent in the PRC furniture market. Insufficient recognition

of green furniture products, lack of knowledge about what green furniture is, and how to distinguish them from conventional furniture products. In addition to the negative impact of counterfeit green furniture in the market, these reasons may lead to Chinese consumers obtaining less personal value in terms of epistemic value (desire knowledge and seek novelty) and emotional value (arouse positive feelings or affective states) aspects.

H2c: Eco-friendly system values (social, environmental, and technology) have positively affected Chinese consumers' attitude.

Eco-friendly system values have a positive influence on Chinese consumers' attitudes (β= 0.056*) was supported in this study and consistent with expectations. The more Chinese consumers obtain eco-friendly system values (social, environmental, and technology), the more they evaluate positively green furniture products in PRC's new first-tier cities market. The role of eco-friendly system values that affect consumers' attitudes in terms of social, environmental, and technological aspects have been demonstrated by prior studies (Biswas & Roy, 2015; Gonçalves, Lourenço & Silva, 2016; Poushneh & Vasquez-Parraga, 2017; Xu, Wang & Yu, 2020). Consumers live in a society and their consumption behavior is more or less influenced by some social groups. Meanwhile, consumers' growing environmental consciousness has made environmental value an important value factor influencing consumer's buying behavior. New technologies, especially augmented reality (AR) that can display a virtual 3D model of furniture live from different angles increased consumer satisfaction then further lead to increasing purchasing behavior. The current study clarified that gaining eco-friendly system values, such as social recognition and social image improvement, environmental concern and efforts to solve environmental problems, and new technology implementation is an essential utility that influences on consumers' overall attitude toward green furniture products in PRC's new first-tier cities market.

H3: Attitude (Cognitive, affective, and conative) has positively affected Chinese consumers' consumption behavior.

The assertion that attitude exerts a positive influence on Chinese consumers' consumption behavior (β= 0.654*) was corroborated in this study, aligning with anticipated outcomes. The investigation revealed a substantial and positive impact of attitude on Chinese consumers' consumption behavior with regard to green furniture products in the market of the PRC's new first-tier cities. These findings concur with prior research, which posited that attitude serves as a direct and influential factor that can predict customer consumption behavior (Seyed & Mahnoosh, 2012; Zhao, Gao, Wu, Wang & Zhu, 2014) and positive attitude results in favorable behavior in most circumstances (Michael, James & Michael, 2018). The cognitive, affective, and conative (ACA) model is often used to explain attitude. Some prior studies have proposed that the cognitive, affective, and conative dimensions of attitude wield a noteworthy and favorable impact on brand equity, purchase intention, and purchasing behavior (Liao, Wu, Amaya Rivas & Lin Ju, 2017; Duffett, 2020). However, this finding is contrary to prior research by Cheah & Aigbogun (2022), which discovered a gap in consumer attitudes and behavior toward organic food consumption in Malaysia. Consumers frequently fail to transform their attitudes into actual behaviors. The finding of the present study indicated that consumers who have positive attitudes toward green furniture products are more likely to buy, recommend, and re-purchase green furniture in PRC's new first-tier cities market.

H4: Green Chinese values have positively affected Chinese consumers' consumption behavior toward green furniture.

H4a: Product values (functional, health, service) have positively affected Chinese consumers' consumption behavior toward green furniture.

Product values (functional, health, and service) have a positive influence on Chinese consumers' consumption behavior toward green furniture was supported in this study (β = 0.873*), which is consistent with expectation. This finding is consistent with prior studies (Hsu, Huang, Hsu & Huang, 2016; Han, Wang, Zhao & Li, 2017; Xu, Hua, Wang & Xu, 2020), which claimed a positive relationship between consumer product values (functional, health, service) and

consumer's consumption behaviors. In the case of PRC's new first-tier cities, this result indicated that consumers who perceive green furniture products as an attractive commodity, that offers good functional value, no harm to their health, and good service quality are likely to buy, recommend, and re-purchase green furniture products. Recent consumers increasingly pursue a high standard of green furniture quality in the market (Biswas, 2017), thus, the essential role of functional utility, emphasizing the product-related benefits that green furniture offers to consumers, emerges as a fundamental aspect of engaging in green furniture consumption within the first-tier market of the PRC. The significance of this result lies in the meaningful connection between consumers' responses to the survey and their real-world experiences in consuming green furniture, reflecting the values perceived during market interactions. Consequently, these findings are anticipated to furnish valuable insights for green furniture enterprises.

H4b: Personal values (epistemic and emotional) have positively affected Chinese consumers' consumption behavior toward green furniture.

Personal values (epistemic and emotional) have a positive influence on Chinese consumers' consumption behavior toward green furniture was supported in this study ($\beta = 0.160^*$), which aligns with expectations. This study indicated a substantial and positive impact of personal values on the consumption behavior of Chinese consumers toward green furniture products. This finding is supported by previous studies (Rahnama & Rajabpour, 2017; Kato, 2021). Rahnama & Rajabpour (2017) note that epistemic value is the most crucial factor in green product selection for Iranian consumers. Kato (2021) found that emotional value, rather than functional value, contributes more to brand favor in the Japanese automobile industry. The aforementioned studies found that the more consumers positively evaluate green furniture's epistemic and emotional values, the more they are satisfied.

The present study argued that the same case exists in consumers' green furniture consumption in the PRC's new first-tier cities market. With the

development of the economy, besides basic product values, there is a growing emphasis on epistemic and emotional values. Therefore, green products' psychological attributes, such as offering new knowledge, novelty, and arousing positive feelings an important aspects of consumers' green furniture consumption. However, the finding of the current study is contrary to that of Khan & Mohsin's (2017) research which discovered that epistemic value has a negative effect on green product consumer consumption behavior, while emotional value has no direct impact on green product consumer consumption behavior. The researcher explained the reason for the above findings may be because Pakistani consumers tend to generate a negative perception on green products, and they cannot interpret technical information (such as green product labels) correctly, these then in turn leads to consumers infer that the traditional alternative is superior and better satisfies their needs. Furthermore, Pakistani consumers may perceive the designation of a product as environmentally friendly as merely a marketing strategy, casting doubt on the actual environmental preservation impact asserted by the product. However, in the current study, taking PRC's four new first-tier cities consumers as the research samples, the researcher found that personal value (epistemic and emotional) aspects have a direct positive effect on Chinese consumers' consumption behaviors toward green furniture products.

H4c: Eco-friendly system values (social, environmental, and technology) have positively affected Chinese consumers' consumption behavior toward green furniture.

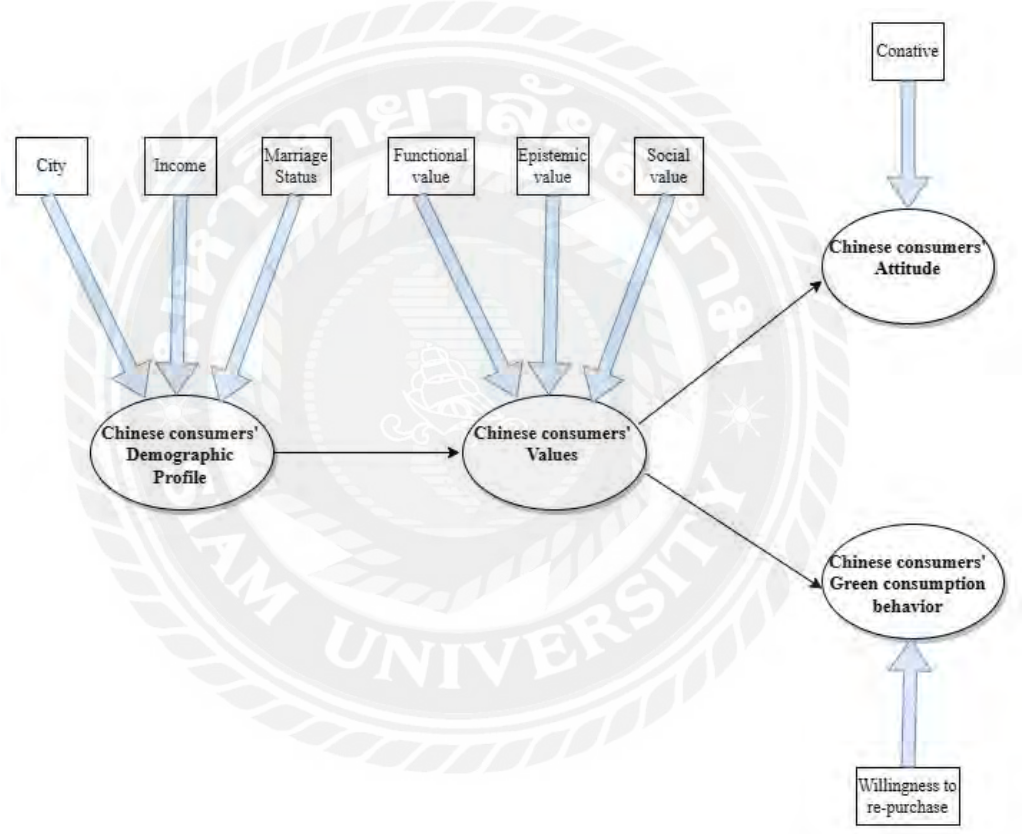
Eco-friendly system values (social, environmental, and technology) have a positive influence on Chinese consumers' consumption behavior toward green furniture (β= 0.543*) was supported, which is consistent with expectations. The study found that the eco-friendly system values exhibited a significant positive effect on Chinese consumers' consumption behavior on green furniture. The more consumers obtain eco-friendly system value in terms of social, environmental, and technological aspects, the more they evaluate positively

toward green furniture consumption in PRC's new first-tier market. The role of eco-friendly system value that affects consumers' green consumption behaviors has been demonstrated by previous studies (Bitner, Brown & Meuter, 2000; Huang & Hsu Liu, 2014; Rivera, Gregory & Cobos, 2015; Gonçalves, Lourenço & Silva, 2016; Yadav & Pathak, 2016; Poushneh & Vasquez-Parraga, 2017; Xu, Wang & Yu, 2020). Gonçalves, Lourenço & Silva (2016) suggested in their study that social values combined with functional, emotional, and conditional values are sufficient to predict green buying behavior. Yadav & Pathak (2016) and Xu, Wang & Yu (2020) revealed in their studies that customers' intention to purchase green products in the Indian and Chinese markets can be predicted by attitude and environmental concern. According to Bitner, Brown & Meuter (2000) and Rivera, Gregory & Cobos (2015), technology, particularly mobile technology, has an impact on customer behavior and can boost consumer satisfaction with their purchase.

Huang & Hsu Liu (2014) and Poushneh & Vasquez-Parraga (2017) further specifically indicated that augmented reality (AR) has a significant and positive influence on user satisfaction, and user experience on social media platforms, as well as increasing willingness to buy and playfulness by providing enriched information for both physical store and online store shopping. However, the findings of the current study are contrary to those reported by Lin and Huang (2012) as well as Biswas and Roy (2015), which suggested an absence of a significant influence of social value, denoting a consumer's inclination toward social recognition or influence, on the behavioral choice of green products. This incongruity in results may be attributed to the perception among certain respondents that adopting environmentally conscious practices does not necessarily engender heightened social approval or leave a good impression. It is difficult to recognize authentic green furniture for ordinary consumers by identifying fairly technical information (e.g., green labels) and distinguishing them from conventional furniture products. The consumer may also view green furniture products as a marketing strategy of the enterprise while the furniture

they buy is not eco-friendly and does no harm to their health. Furthermore, innovative technologies are often heard by consumers and promoted by enterprises, however, it is still in the initial development stage which means these technologies are not widely used in current green furniture products in practice. In conclusion, the practical solution in this study can be a paradigm as below in Figure 15.

Figure 15: The practical solutions for enhancing green furniture consumption in PRC's new first-tier cities' market.



Recommendation

The results of this study contribute to the academic domain and offer practical implications, proposing marketing strategies for enterprises engaged in green furniture and the broader home furnishing industry.

Theoretical contributions

This study presents empirical testing of previously insufficiently tested relationships for green furniture products in the PRC's new first-tier cities market.

Drawing from the study's findings, this section accentuates theoretical contributions as follows.

First, the current study broadens on previous research regarding green furniture products in PRC's new first-tier cities market. The role of green products, specifically green furniture, has been prominently highlighted in the existing literature due to their eco-friendly and less harmful attributes to both the environment and consumer health, which has led to increased customer demand for green furniture products in recent years (Cai, Xie & Aguilar, 2017; Xu, Hua, Wang & Xu, 2020). However, studies on green furniture products in the PRC's new first-tier cities market are still in their unfledged stages. A predominant focus in preceding research has been on the supply side. This study contributes to the existing body of knowledge by elucidating the "demand" for green furniture consumption from the consumer perspective. The examination of consumers' experiences and perceptions related to green furniture in this study serves to bridge an extant research gap.

Second, the present study endeavored to formulate and validate a novel measurement, "PRC's new first-tier cities consumer's green furniture consumption value scale." Communicating and delivering value to consumers is important because it can maintain an enterprise's sustainable competitive advantage and bring long-term profit (Lee & Min, 2013; Baoguo & Laksitamas, 2020; β= 0.817* product value on consumption behavior). Consumer value stands as a fundamental concept in the furniture industry. Nevertheless, there is a scarcity of empirical studies pertaining to consumer value in the context of green furniture consumption in PRC's new first-tier cities. Therefore, identifying various values that are provided to consumers when they consume green furniture is essential. Through the iterative process of scale development in prior research, the findings disclose that the Chinese consumer's valuation of green furniture consumption encompasses three discernible dimensions: "product value," "personal value," and "eco-friendly system value." This study affirms that these dimensions, heretofore unexplored empirically, contribute valuable

insights to the extant literature on green furniture consumption. The adoption of a multidimensional approach proves advantageous, surpassing the limitations associated with unidimensional methods of measuring consumer value, as acknowledged by Lee, Lee, and Choi (2011). This nuanced approach not only mitigates such limitations but also furnishes substantial insights for furniture enterprises. The developed scale aids in comprehending the nuances of green furniture consumption value and the relative magnitudes of its constituent domains. Consequently, this study is poised to stimulate further research on the determinants and results of the green furniture consumption value among Chinese consumers in the PRC.

Third, the present study delved into the intricate interconnections among the green furniture consumption value, attitude toward green furniture, and consumption behavior of Chinese consumers in the PRC. The efficacy of the consumer's green furniture consumption value in elucidating the overarching attitude toward green furniture products has been established. Consequently, it is anticipated to emerge as a robust predictor of outcomes associated with green furniture consumption, encompassing aspects such as satisfaction with the use of green furniture products, willingness to recommend, and propensity to repurchase green furniture. Most previous studies have focused on consumer's intention to buy during their pre-stage of purchasing. However, this study investigated consumers' consumption behavior after they purchased green furniture. The findings empirically verify the notion that attitude toward green furniture impacts consumer consumption behavior and this finding is consistent with previous literature that suggests consumption behavior can be predicted by attitude. This present study divided consumers' consumption behavior into "willingness to buy" "willingness to recommend" and "willingness to re-purchase." Investigating consumer behavior along three distinct dimensions is crucial because "willingness to re-purchase" requires greater consideration than "willingness to buy" and "willingness to recommend green furniture products to others." This endeavor had not been adequately realized in previous scholarship;

thus, the present study extends and broadens the scope of existing research on consumption behavior.

Fourth, this study makes a novel contribution through its inaugural empirical application of the value-attitude-behavior hierarchy, consumption value, and the Theory of Planned Behavior (TPB) to the context of green furniture consumption among Chinese consumers in the newly designated first-tier cities of the People's Republic of China (PRC). The foundational tenets of these theories were employed to explicate the green furniture consumption behavior of Chinese consumers, albeit with certain adaptations made to accommodate the particulars of this study. Some new green Chinese values such as awareness of green furniture, service, and technology values were integrated into the grounded theories and considered as an important antecedent of consumption behavior for new first-tier cities Chinese customers. The expansive nature of certain values arises from their division into multiple dimensions, each independently measured within the context of green furniture consumption among Chinese consumers. Scholars must be mindful that adjustments to the concepts of the original value-attitude-behavior hierarchy, consumption value, and Theory of Planned Behavior (TPB) theories may be requisite when applying these theories to diverse research contexts, as certain values may prove incongruous or inapplicable within those specific settings.

Finally, this study conducted an examination of measurement invariance, structural invariance, and path invariance to discern the impact of green furniture consumption value on Chinese consumers in the PRC. Specifically, this investigation identified variations in the effects on consumers' attitudes toward green furniture, willingness to purchase, willingness to recommend, and willingness to repurchase based on their diverse metropolitan residency backgrounds. The adoption of multigroup analysis, recognized as an advanced method (Kim, Agrusa & Chon, 2014), serves to enhance the scope of research pertaining to the influential role of PRC consumers with distinct demographic profiles in their acquisition of green furniture products.

The current study attempts to describe PRC consumers' demographic attributes who purchase green furniture products and identify a comprehensive component of green value factors that affect Chinese consumers' attitude and their choice behavior. It provides insights to furniture enterprises on devising and implementing effective marketing strategies to effectively communicate with Chinese consumers to achieve long-term sustainability development in the furniture industry. It also offers possible information for government officials, policymakers, and other relevant organizations to improve the legal system on the green furniture sector for the Chinese new first-tier cities market and also the international market. The findings of this study reveal that, on one hand, key Chinese consumer values, namely product value and eco-friendly system value, exert a substantial influence on Chinese consumers' attitudes. Conversely, on the other hand, attitudes, in turn, positively impact the green consumption behavior of Chinese consumers.

Marketing management implications

Several managerial and practical strategies emerge from the empirical investigation. Based on research findings, the following implications and recommendations are proposed for consumers, enterprises, government officials, and relevant organizations.

Strategic recommendations for consumers

Consumers are practitioners of consumption behavior for green furniture products. Based on the findings of the present study, the strategic recommendations for PRC's new first-tier cities' consumers' consumption behaviors are as follows:

First, accumulating useful knowledge on green furniture products. Consumers must actively learn and improve their knowledge and ability to identify authentic green furniture products, learn the benefits generated from the consumption of green furniture products, be familiar with the purchase place and channels, understand the green labels system and relevant laws or regulations, and accumulate their purchase experience continuously then provide useful

suggestions to government officials to sustainably boost green furniture consumption.

Second, it is imperative to discern and cultivate the values of Chinese consumers, fostering a favorable attitude towards the consumption of green furniture. Values and attitudes constitute the foundational elements of individual behavior. Consumer values become ingrained in their lifestyles and manifest in final purchasing behaviors through discernible consumption patterns, as elucidated by Tu, Hsu, and Creativani (2022). Consumers with a positive attitude toward green furniture are more likely to consume it. Therefore, identifying Chinese consumers' significant values and fostering positive attitudes toward green furniture product consumption is the basis of green purchase behavior. However, a mixed hybrid of green furniture may be adopted according to lower-class and upper-class customers.

Third, cultivating green furniture consumption lifestyles and improving the consumption capability. Building upon the establishment of values and attitudes towards green furniture consumption, consumers must articulate a discernible and feasible purchase plan. Such a plan aims to expedite, simplify, and imbue purpose into the process of green furniture acquisition. The cultivation of new habits in green furniture purchasing and the adoption of eco-conscious consumption lifestyles necessitate significant efforts on the part of consumers. This endeavor involves exploring new retail options, dedicating additional time and energy due to product availability considerations. Furthermore, the study's findings underscore that, on one hand, key Chinese consumer values (product value and eco-friendly system value) exert a considerable influence on their attitudes. Conversely, on the other hand, these attitudes positively impact the green consumption behavior of Chinese consumers. Consequently, enhancing consumers' capabilities in green furniture consumption emerges as a critical imperative.

Strategic recommendations for business enterprises

Enterprises assume a pivotal role in influencing consumers' green

furniture consumption behavior, and the marketing strategies employed by enterprises significantly impact consumer purchasing behaviors. The strategic recommendations for enterprises, derived from this study, are outlined as follows:

First, increasing the overall value of green furniture in terms of functional, health, and service aspects, as well as delivering good quality and courteous service to PRC consumers, is necessary. As consumers will not purchase products merely based on their green attributes, their consumption behavior is based on a set of comprehensive values, and among these values, product value, which is mostly related to functional utility, quality, comfort, non-hazardous and non-toxic materials used, cordial service, and promised guarantee time, are still some essential requirements for today's PRC consumers. Product value utilization is something that people take for granted, making it easy for enterprises and green furniture marketers to overlook it. Therefore, the Chief Executive Officer (CEO) of enterprises must constantly improve the perceived product value to further boost the appeal of green furniture products, product value is particularly important for Hangzhou and Wuhan customers.

Second, the eco-friendly system value of green furniture, through the explanation of the meanings of social, environmental, and technological values, needs to be highlighted to PRC consumers, particularly consumer groups who are married with two or more children and with an income of 7,001 yuan and above. Furniture enterprises operating in the new first-tier cities of the PRC should prioritize the provision of green furniture products aligning with the social identity prevalent are environmentally friendly, and implement innovative technology for consumers. For example, when entering the PRC’s new first-tier cities market, display a television video in front of the furniture store showing what celebrities have purchased the furniture, how the furniture helps to reduce pollution to the environment, advertising recycled or reused materials (e.g., plastic bottles), or a salesperson who helps to explain what new technology (e.g., AR) is applied to the furniture product and the positive impacts of using this technology on the consumer's decoration or their daily lives, these measurements

may arouse interest and creates trust among customers. To achieve long-term sustainability in the furniture industry, the aforementioned comprehensive components of green value factors that have an impact on Chinese consumers' attitudes and choice behavior were identified, insights on effective marketing strategies were provided, and possible solutions to enhance green furniture consumption in PRC's new first-tier cities market were proposed.

Third, consumers harboring positive attitudes towards green furniture exhibit an increased likelihood to engage in the purchase of green furniture products. In this context, such consumers are more predisposed and willing to make purchases, disseminate positive comments about green furniture products to others, and express a willingness to engage in future repurchases. This is particularly effective with the consumer groups who perceive high product values. Thus, the CEO of green furniture enterprises and marketing manager should understand the antecedents of attitudes toward green furniture products for PRC's new first-tier cities consumers. This study found that "product value" and "eco-friendly system value" proved to be effective in increasing PRC consumers' positive attitudes and consumption behaviors. These values should be further studied in Thailand's green furniture market as well as seek market approval opportunities.

Fourth, the levels of effectiveness of consumers' demographic characteristics on their values toward green furniture products are different among demographic groups. This comprehension empowers green furniture enterprises and marketers to segment their target customers judiciously and allocate their finite resources prudently. By strategically formulating marketing decisions and management approaches, they can optimize the efficacy of green furniture consumption behaviors among demographic groups presenting the highest potential for purchasing green furniture products. In this study, CEOs of enterprises and marketing managers are suggested to focus on demographic groups: 1) customers from Hangzhou and Wuhan; 2) customers aged between 30 – 44 years; 3) customers with a monthly income of 7,001 yuan and up; 4)

customers married and with one or more children, due to these groups are with higher willingness to buy, recommend, and re-purchase.

Enterprises should allocate substantial resources toward research and development initiatives aimed at advancing sustainable and environmentally friendly materials for the production of cost-effective green furniture. This endeavor is crucial to ensuring accessibility for consumer groups across varying income levels. Given the prevalent combinations of both green and non-green materials in furniture products, enterprises can significantly contribute to the green furniture industry by minimizing the utilization of non-eco-friendly raw materials. For marketers, fostering the prevalence of eco-friendly furniture items crafted from natural substances instead of wood constitutes a viable strategy to contribute to environmental conservation. A predominant challenge encountered by green furniture products stems from the prevalent utilization of panel or wood-steel-based materials, a circumstance exacerbated by the slow growth and scarcity of forest resources. This incongruity engenders a conundrum wherein the escalating demand for green furniture products exacerbates the strain on limited forest resources. To address this dilemma, marketers employ diverse marketing strategies aimed at elevating the appeal of green furniture products fashioned from alternative natural materials, steering consumers towards an incremental shift in favor of green furniture sourced from more sustainable options, such as bamboo, rattan, and grass, or materials that are renewable or recycled. This concerted effort seeks to diminish the consumption of wooden furniture products over time, with the overarching objective of mitigating the conflict between the constrained nature of forest resources and the escalating consumer demand for green furniture products to some extent. Simultaneously, enterprises should explore innovative approaches in developing synthetic materials that align with environmental sustainability and are less harmful to consumers' health. Examples include the exploration of biodegradable plastics, enhanced durability in materials, recyclable alternatives, and the utilization of environmentally friendly natural resources such as bamboo and rattan to produce

green furniture. Additional measures, such as transparently disclosing the origin, proportion, and production processes associated with non-environmentally friendly materials, coupled with the implementation of a tiered pricing strategy, can effectively segment consumer groups. This stratagem empowers consumers to make informed decisions based on their preferences and diverse environmental concerns, fostering a more conscientious and discerning market for green furniture products.

Strategic recommendations to government organizations

Governmental bodies and pertinent organizations wield a crucial influence on the green consumption of green furniture products, serving as a pivotal force for advancing green furniture consumption at a macro level. In conjunction with the empirical findings of this study, the strategic recommendations for the government and relevant organizations are outlined as follows:

First, the PRC government and policymakers should enhance the dissemination of knowledge about green furniture products, standardize industry guidelines, and promote the use of new technologies for green furniture products. The government can encourage potential consumers by underscoring the unique experiential aspect of acquiring new knowledge through green furniture consumption. Emphasizing personal value in marketing messages, highlighting the dual benefits of green furniture for both the environment and the physical well-being of customers, and providing educational initiatives to enable customers to discern between green and traditional furniture are recommended strategies. While personal value has been found to be ineffective in fostering a positive attitude toward green furniture products among consumers in the newly designated first-tier cities of the PRC, it remains noteworthy as an important consumption value. This is attributed to its demonstrated direct positive impact on consumption behavior. Personal values may not have a positive impact on attitudes because the public's knowledge of green furniture is still limited. Many consumers are still unfamiliar with green furniture products and how to

distinguish them from conventional furniture. Therefore, the strategic timeline for sustainable and long-lasting green furniture should be postured within product variability of 10, 5, and 2-3 years.

Second, cooperation with various stakeholders, organizations, and institutions is necessary to disseminate green furniture and industry guidelines knowledge and implement innovative technology in the industry. Despite the Chinese government's limited human, material, and financial resources, there are a large number of furniture-related organizations and institutions in the PRC that can make significant contributions to disseminating knowledge about green furniture and industry guidelines knowledge and illustrating the application of new technologies in green furniture products. Collaboration between the PRC government and these organizations and institutions has the potential to positively influence the enhancement of the PRC's green furniture supply chain system. For instance, the China National Furniture Association (CNFA) has experts who are knowledgeable about green furniture products and industry guidelines, and they can organize online or offline public seminars to disseminate product knowledge about green furniture and the implementation of new technologies in green furniture products to consumers. Other government policies frequently necessitate the collaboration of stakeholders and organizations. For example, the establishment of green furniture sales zones in home furnishing stores advocated by the government requires the cooperation of furniture stores. Setting up drop-off points for used furniture in residential communities, improving the recycling network, promoting online booking for collection and transportation of used furniture products, and supporting door-to-door recycling collecting by furniture manufacturers may require the cooperation of property companies, information technology companies, and furniture manufacturer enterprises. Therefore, in addition to disseminating knowledge about green furniture by the PRC government itself, it is advisable to seek cooperation with other organizations and institutions as well.

Furthermore, the Chinese market still lacks authoritative green furniture

certification systems and green labels, and the existence of counterfeit green furniture in the market remains an issue for consumers, which leads to the market not yet forming a mainstream trend of consuming green furniture. To address these issues, the government and policymakers need to enhance green furniture promotion, establish clear standards for green furniture identification, and implement a unified, simple, convenient, and authoritative green label system. The government can consider setting up a unified national green furniture certification system by applying new technologies (such as QR codes and augmented reality) to make consumers easily and quickly identify authentic green furniture products. At the same time, establishing and improving relevant commercial laws and regulations to combat greenwashing counterfeit green furniture is also necessary and very crucial to enhance reliability of the green furniture products in the market. Positive social and environmentally friendly practices in furniture consumption should be advocated to subsidy green furniture. Negative practices such as counterfeit green furniture products ought to be constrained and have harsh punishments. In addition to traditional publicity methods such as television, newspapers, magazines, websites, and so on, new forms of social media such as self-media, or even inviting consumers to participate in the supply chain of raw material selection, production, packaging, logistics, marketing process, may assist consumers better understand green furniture products and then promote that knowledge to people around them. Only when consumers have extensive and in-depth knowledge of green furniture can they be able to make a decision. This study provides possible information for government officials, policymakers, and relevant organizations (such as the furniture association) to improve the legal system (such as evaluation criteria of green furniture, unified green labels system, law and regulation standard to subsidy green furniture or constrain non-green furniture) in the industry.

Limitations of the study

Although this study makes a valuable contribution to the knowledge surrounding PRC's new first-tier cities consumers' consumption behavior on

green furniture products, several limitations should be addressed. The following are four limitations of this study that might offer some insight for future research:

First, this study talks about only the marketing field of green furniture products in terms of value, attitudes, and consumption behaviors from the consumer's perspective. There is a point that piqued the researcher's interest when conducting this study - green manufacturing in the furniture industry, which studies detailed measurements taken to improve furniture products' greenness in the manufacturing processes from the viewpoint of manufacturers. However, as this field is not directly related to my research objectives, thus, it is beyond the scope of this study to address the question of measurements to improve furniture products' greenness during the manufacturing process. Future researchers can consider exploring it further.

Second, this study is limited to a small number of participants and it was only conducted in four PRC's new first-tier cities named Hangzhou, Wuhan, Chengdu, and Xi'an from a total of fifteen first-tier cities. Therefore, the findings cannot be generalized to those that are not in the new first-tier cities list in 2022. Despite this limitation, this study makes an important contribution because these four cities were meticulously chosen in the study under the comprehensive consideration of geographical location, demographic characteristics, economic conditions, stability and consistency of cities on the assessment list, regional center city, these features make these cities an outstanding representation of the new first-tier cities.

The third limitation pertains to the refinement of the demographic profile of consumers in the PRC and the scale measuring green furniture consumption values. The measurement framework is constructed on the foundation of the value-attitude-behavior hierarchy theory, consumption value theory, and the theory of planned behavior (TPB). Preceding the main survey, the questionnaires underwent multiple rounds of testing. However, the appropriateness of scale refinement may be contingent on examinations conducted across diverse samples encompassing green furniture products from various countries or

regions. Thus, the researcher encourages scholars to examine the causal model in diverse countries and regions with various cultural backgrounds in the future. The advancement of green furniture products and the evolving preferences across various consumer generations may necessitate enhancements to the existing model within the current study. Consequently, either refinement of the extant model or the development of a new model may be imperative to augment its accuracy over an extended timeframe.

Fourth, this study relied on a questionnaire survey instead of directly assessing customers' consumption behavior in real-world contexts. Respondents were subject to societal constraints during their engagement with consumption behavior questionnaires, potentially biasing their responses toward socially anticipated outcomes and thereby constraining the precision of the research. Augmenting the survey results with supplementary methods, such as field observations, follow-up surveys, diary interviews, and in-depth interviews, would enhance the persuasiveness of the findings by providing a more comprehensive understanding of customers' attitudes and the process of consumption behavior.

Future research

The study introduces and formulates a causal model elucidating the relationship between values and attitudes among Chinese consumers, thereby enhancing their green furniture consumption behavior in the new first-tier cities of the PRC. This constitutes a nascent research domain with substantial potential for future exploration. The following implications and recommendations are hereby presented to consumers, enterprises, green furniture marketers, the government, and relevant organizations in the PRC. Suggestions for future research are presented in the following four aspects:

First, future research is encouraged to focus on the upstream of the supply chain stage - green manufacturing in the furniture industry. Green manufacturing, also called green production, is a sustainable manufacturing approach that consumes less material and energy, substituting input materials, and establishing

environmentally-friendly operations within the manufacturing field. Adopting sustainable green manufacturing practices that minimize environmental harm is a necessity and is the goal for many enterprises in today's world (Nagle, 2022). Green manufacturing in the furniture industry that mostly related to the production section at the upstream of the supply chain while this study mainly focuses on consumer and marketing aspects at the downstream of the supply chain because manufacturing is not directly related to the research aims. However, it should be an interesting topic recommended for future exploration and future researchers can consider digging deep into this aspect.

Second, it is suggested that future research conduct a study with a larger group of participants. As highlighted in the previous section, new first-tier cities have significant potential for growth and are becoming increasingly important in PRC's economic development, thus it is crucial to investigate the consumption behavior of PRC's new first-tier cities' consumers toward green furniture products. However, this study only investigated four essential new first-tier cities: Hangzhou, Wuhan, Chengdu, and Xi'an due to time and financial constraints. Future research is suggested to broaden the scope of the study to include all fifteen new first-tier cities with a larger group of participants.

Third, it is recommended that future research extends the validation of the newly devised scale across a more diverse array of contexts. This entails scrutinizing whether the demographic profiles, values, attitudes, and dimensions of consumption behavior can be consistently affirmed. Upon confirmation, the scale may be subsequently employed alongside other constructs to explore relationships between consumers' green furniture consumption values and additional perceptions or behaviors. Further segmentation to examine some intriguing demographic groupings is also suggested, for instance, splitting consumers' material status and number of children into more specific segment groups. This study divided marital groups into only five groups, and it examined only families with one child, or two and more than two children in terms of the effects of the number of children on consumer's value factors. Future research is

required to establish whether the number of children is a factor in PRC consumers' green furniture consumption behaviors. Meanwhile, the comprehensive implementation of the three-child policy in the PRC is anticipated to boost the growth of children's furniture, making research in this field very intriguing. Furthermore, as most common furniture styles are made of panel and steel-wooden structures (Wan & Toppinen, 2016; Searce, 2002), research on sustainable resource consumption is also an interesting topic. For instance, the conflict between increasing demand for wooden green furniture and slowly growing and limited forest resources. These are some compelling questions for future research and it is encouraged to test the developed scale in more diverse regions and countries.

Fourth, it is advisable to undertake longitudinal research to gather data over an extended period. The initial phase would delve into demographic characteristics correlated with consumer values, while the subsequent stage would involve the observation and investigation of consumer choice behavior in the real-life scenarios. Utilizing empirical data from real-life settings to substantiate the causal impact of factors and comprehensively scrutinizing the incremental transition process from attitude to consumption behavior could enhance the precision of the research.

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APPENDICES

Appendix 1: Questionnaires（English version）

Questionnaire

This research will be used to complete a doctoral dissertation in the marketing program at Siam University, which aims to study the SEM model developed with key value factors (product value, personal value, and eco-friendly system value) that influence Chinese consumers' attitudes and consumption behavior toward green furniture products in PRC's new first-tier cities market.

Questionnaires for Research on Modelling Chinese Consumers in Green-Value-Attitude Enhancing New First-tier Cities' Furniture Consumption Market

Part 1. The demographic characteristics of respondents

please mark ✓on the item suited to you.

City	
Wuhan ☐	Xi'an ☐
Hangzhou ☐	Chengdu ☐
Sex status	
Male ☐	Female ☐
Age range	
15-29 ☐	30-44 ☐
45-59 ☐	60 years and above ☐
Education level	
Senior school and below ☐	Undergraduate ☐
Postgraduate and above ☐	
Income per month(yuan)	
Under 3000 ☐	3001-5000 ☐
5001-7000 ☐	Above 7001 ☐
Marriage condition	
Single and stay alone ☐	Single and stay with family ☐
Married without children ☐	Married with one child ☐

Married with two or more children ☐	
Which types of organizations have you bought green furniture from?	
Chinese local-based enterprise ☐	International-based enterprise ☐
Multinational-based enterprise ☐	

Part 2: Factors influencing Green Chinese values toward green furniture consumption.

Please mark ✓ on the items suited to you. (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree).

Item	Factor	Agreement level				
		1	2	3	4	5
Functional Product	The eco-friendly furniture is of premium quality	☐	☐	☐	☐	☐
	The eco-friendly furniture is durable	☐	☐	☐	☐	☐
	The green furniture has a beautiful design	☐	☐	☐	☐	☐
	Green furniture is very comfortable	☐	☐	☐	☐	☐
Health Product	Green furniture design should focus on physiological aspects	☐	☐	☐	☐	☐
	Green furniture is made of non-hazardous and non-toxic materials	☐	☐	☐	☐	☐
	Customers think often about the health-related issues in green furniture purchase decision	☐	☐	☐	☐	☐
Service Product	Well-trained and knowledgeable employees can provide fast and good service	☐	☐	☐	☐	☐
	Regularly logistics process status checks after sales are important	☐	☐	☐	☐	☐
	Cordial service relationships with employees can make re-purchase of green furniture	☐	☐	☐	☐	☐
	The guarantee promised enhances green furniture consumption	☐	☐	☐	☐	☐
Epistemic Personal	A great deal of new and novel information about green furniture was acquired	☐	☐	☐	☐	☐
	Customers believe that green furniture is beneficial to themselves and the people around them	☐	☐	☐	☐	☐
	Customers recommend green furniture to their friends or family	☐	☐	☐	☐	☐
Emotional Personal	Green furniture can satisfy customer's demand	☐	☐	☐	☐	☐
	Green furniture can arouse customer's positive feelings	☐	☐	☐	☐	☐
Social Eco-friendly system	Buying green furniture conforms with pro-environmental social identity	☐	☐	☐	☐	☐
	Green furniture would help to improve the social image	☐	☐	☐	☐	☐

	Green furniture purchases would create a good impression on friends and family	☐	☐	☐	☐	☐
	Social approval is an important motivator of green furniture consumption	☐	☐	☐	☐	☐
Environmental Eco-friendly system	Ecology is a reason to switch product	☐	☐	☐	☐	☐
	Green furniture purchase means potential environmental concern issues	☐	☐	☐	☐	☐
	Purchasing green furniture is an important aspect of making a social contribution to saving the earth	☐	☐	☐	☐	☐
Technology Eco-friendly system	The application of new technology in green furniture products increases its attractiveness.	☐	☐	☐	☐	☐
	New technology enhances trust in the manufacturing process of green furniture	☐	☐	☐	☐	☐
	Augmented reality (AR) is empowering for home decoration decision	☐	☐	☐	☐	☐
	The innovative technology facilitates green furniture purchasing	☐	☐	☐	☐	☐

Part 3: Factors influencing attitude toward green furniture consumption. Please mark

✓ on the items suited to you. (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree,

5 = Strongly Agree).

Item	Factor	Agreement level				
		1	2	3	4	5
Attitude	Customers are aware that green furniture is relevant to them and arouses their interests	☐	☐	☐	☐	☐
	Customers can distinguish green furniture from conventional furniture	☐	☐	☐	☐	☐
	Buying green furniture is awesome	☐	☐	☐	☐	☐
	Customers are inclined to switch to green furniture products	☐	☐	☐	☐	☐

Part 4: Factors that influence on consumption behavior of Chinese consumers toward green furniture. Please mark ✓ on the items suited to you. (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree).

Item	Factor	Agreement level				
		1	2	3	4	5
Consumption behavior	Customers are willing to purchase green furniture	☐	☐	☐	☐	☐
	Customers would recommend green furniture to their friends and family	☐	☐	☐	☐	☐
	Customers intend to repurchase green furniture in the future	☐	☐	☐	☐	☐

Note: This questionnaire is for academic research only and the content is confidential.

Appendix 2: Questionnaires（Chinese version）

中国新一线城市消费者在绿色家具消费市场中的价值-态度-消费行为模型研究

(本问卷仅供学术研究，内容绝对保密)

Questionnaires for Research on Modelling Chinese Consumers in Green-Value-Attitude Enhancing New First-tier Cities' Furniture Consumption Market

第一部分:被调查者的基本情况（请在合适的选项□中打上√）。

您所在的城市	
武汉 □	西安 □
杭州 □	成都 □
性别	
男 □	女 □
年龄	
15-29 岁 □	30-44 岁 □
45-59 岁 □	60 岁以上 □
教育程度	
高中及以下 □	本科（含大专） □
硕士及以上 □	
月薪(人民币：元)	
3000 元以下 □	3001-5000 元 □
5001-7000 元 □	7001 以上 □
家庭状况	
单身独居 □	单身与父母同住 □
结婚没有孩子□	结婚有一个孩子 □
结婚有两个或两个以上孩子□	
您从何处购买的绿色家具产品?	
中国本地企业 □	国际企业 □
跨国公司 □	

第二部分: 中国消费者对绿色家具消费的影响因素（请在合适的选项□中打上√；1 = 非常不同意, 2 = 不同意, 3 = 一般, 4 = 同意, 5 = 非常同意).

价值因素

项目	影响因素	同意程度				
		1	2	3	4	5
产品功能价值因素	生态友好型家具拥有良好的品质	□	□	□	□	□
	生态友好型家具是经久耐用的	□	□	□	□	□
	绿色家具拥有美观的设计	□	□	□	□	□
	绿色家具很舒适	□	□	□	□	□
产品健康价值因素	绿色家具设计应注重消费者身体健康方面的因素	□	□	□	□	□
	绿色家具应使用无毒、无害的材料制成	□	□	□	□	□
	顾客在决定购买绿色家具时经常会考虑到与健康有关的问题	□	□	□	□	□
产品服务价值因素	训练有素、知识丰富的员工可以为客户提供快速且优质的服务	□	□	□	□	□
	售出绿色家具后，定期更新产品的物流和运输状态很重要	□	□	□	□	□
	亲切的服务会激发顾客复购绿色家具	□	□	□	□	□
	长时间的质保期限可以提升消费者对绿色家具的消费	□	□	□	□	□
个人认知价值因素	消费者可以获得大量关于绿色家具方面最新的信息	□	□	□	□	□
	消费者相信绿色环保家具对自己及周围的人是有益的	□	□	□	□	□
	消费者会将绿色家具推荐给他们的家人和朋友	□	□	□	□	□
个人情感价值因素	绿色家具能够满足消费者的购买需求	□	□	□	□	□
	绿色家具可以唤起消费者积极的情感和情绪	□	□	□	□	□
生态友好型社会价值因素	消费者购买绿色家具是为了与支持环保的主流社会认同相符	□	□	□	□	□
	购买绿色家具将有助于提升消费者的社会形象	□	□	□	□	□
	购买绿色家具会给家人和朋友留下好印象	□	□	□	□	□
	社会认可是绿色家具消费的一个重要激励因素	□	□	□	□	□

生态友好型环境价值因素	保护生态环境是消费者转换购买绿色家具产品的原因	□	□	□	□	□
	消费者购买绿色家具意味着他们有潜在的环保意识	□	□	□	□	□
	购买绿色家具可以为拯救地球做出重要的社会贡献	□	□	□	□	□
生态友好型技术价值因素	新技术在绿色家具产品中的应用增强了它们的吸引力	□	□	□	□	□
	新技术增强了消费者对绿色家具制造过程中的信任	□	□	□	□	□
	在家庭装修中，增强现实（AR）的应用可以帮助消费者做出装修决策	□	□	□	□	□
	创新技术促进了消费者对绿色家具的购买	□	□	□	□	□

第三部分: 中国消费者对于绿色家具态度的影响因素（请在合适的选项□中打上√；

1 = 非常不同意, 2 = 不同意, 3 = 一般, 4 = 同意, 5 = 非常同意).

态度因素

项目	影响因素	同意程度				
		1	2	3	4	5
态度	消费者意识到绿色家具与他们的生活相关并引起了他们的兴趣	□	□	□	□	□
	消费者可以将绿色家具与普通家具区分开来	□	□	□	□	□
	购买绿色家具是非常好的行为	□	□	□	□	□
	消费者倾向于改用绿色环保的家具产品	□	□	□	□	□

第四部分: 中国消费者对于绿色家具消费行为的影响因素（请在合适的选项□中打

上√； 1 = 非常不同意, 2 = 不同意, 3 = 一般, 4 = 同意, 5 = 非常同意).

项目	影响因素	同意程度				
		1	2	3	4	5
消费行为	消费者愿意购买绿色环保的家具产品	□	□	□	□	□
	消费者会将绿色家具推荐给他们的家人和朋友	□	□	□	□	□
	消费者打算在未来再次购买绿色环保的家具产品	□	□	□	□	□