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Factors Influencing Consumer Purchasing Intention Towards Real Estate for Elders' Wellness and Health in Guangdong Province

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Abstract

The aim of this study is to validate the influence of subjective norms, perceived behavioral control, trust, and attitude on the intention to purchase real estate for elders' wellness and health ("REWH"), with the goal of providing decision-making recommendations for government departments, "REWH" enterprises, financial institutions, and consumers, and promoting the healthy development of the "REWH" market.

This study employed a quantitative research method, targeting the elderly population in Guangzhou and Foshan. Through a carefully designed questionnaire survey, we successfully collected a large amount of valuable data. A total of 429 questionnaires were issued during the survey. To ensure the accuracy and reliability of the research results, we have carried out strict screening and processing of the collected data. After eliminating invalid questionnaires, we randomly selected 360 valid questionnaires for in-depth analysis and processing. In the analysis process, we used a variety of statistical methods, including descriptive analysis, reliability and validity analysis, structural equation modeling, and path analysis.

The research findings indicate that subjective norms have a significantly positive impact on purchasing attitude and intention; perceived behavioral control has a significantly positive impact on purchasing attitude and intention; trust has a significantly positive impact on purchasing attitude and intention; and purchasing attitude has a significantly positive impact on purchase intention.

Keywords: Estate for Elders' Wellness and Health; The Elders; Purchase Intention

Introduction

In the global context, as the aging population continues to grow, countries are facing significant challenges. Consequently, the “REWH” has seen rapid development opportunities. With one of the largest elderly populations globally, China's demand for elderly care continues to rise. According to statistics, the size of the "REWH" in China reached 985.2 billion yuan in 2022, an increase of 72.8 billion yuan from the previous year, with a year-on-year growth rate of 8.0%. Of particular note, "REWH" accounts for 15.7% of the overall "REWH", with a scale of 1.551 trillion yuan, making it the largest segment (Gongyan.com., 2023), demonstrating significant development potential.

Based on the data from the seventh national census of Guangdong Province, the population aged 60 and above accounts for 12.35% of the total population, with the elderly population in Guangdong Province reaching as high as 15.5651 million (Office of the Seventh National Census Leading Group of the State Council, 2021). It is expected that by 2030, the proportion of the elderly population in the province will exceed 20%, officially entering a moderately aging society (Guangdong People's Congress Network, 2022). Guangdong Province not only has a large population base of elderly individuals but also serves as the economic center of southern China, boasting a leading GDP, abundant resources, and prosperous industries, making it one of the wealthiest provinces in China. This strong economic position drives substantial demand in Guangdong's "REWH" market. Furthermore, the province's relatively consistent climate throughout the year is suitable for elderly living. Simultaneously, "REWH" has garnered widespread attention, with governments rolling out preferential policies at all levels. However, the "REWH" sector also faces a series of challenges, including high initial investment, financing difficulties, market homogenization, and lack of product innovation (Chen, 2019; Zhang, 2016; Zhao, 2016). Therefore, conducting an in-depth analysis of the purchasing intentions of "REWH" consumers in Guangdong Province holds significant research value.

"REWH" refers to specialized residential products that provide living and elderly care services for the elderly, including dining, medical care, nursing, and entertainment services. Its primary goal is to meet the physical and mental needs of the elderly, creating a suitable environment for retirement living to improve their quality of life and ensure that the elderly can enjoy healthy and comfortable living conditions.

This study comprehensively applies the Theory of Planned Behavior and the Theory of Perceived Risk to analyze the formation process of "REWH" consumers' purchasing intentions. It addresses the gap in simultaneously applying the Theory of Planned Behavior and the Theory of Perceived Risk to the study of "REWH" purchasing intentions, enriches the applicability of the Theory of Planned Behavior in "REWH", and, for the first time, considers trust as one of the dimensions when investigating purchasing intentions, thus filling a gap in the lack of attention to the trust variable from the Theory of Perceived Risk in the investigation of "REWH". Finally, it expands the applicability and scope of the Theory of Perceived Risk.

Content

Theory and research

The Theory of Perceived Risk refers to the significant financial transactions involved in the process of purchasing "REWH", which introduces a certain level of risk for consumers, thereby influencing their purchase intentions. Addressing these risk issues can increase the purchasing intentions of a portion of "REWH" consumers. Viklund's (2003) research clearly indicates that trust plays a crucial role in risk perception, and Pang Zhenjing (2020) study

further emphasizes trust as an essential component of risk measurement. In summary, these research results emphasize the crucial role of trust as a key dimension in perceiving risk, highlighting that strengthening trust in the context of perceived risks can enhance the purchasing intentions for "REWH".

The Theory of Planned Behavior posits that under appropriate conditions of perceived behavioral control, the most reliable predictor of individual behavior is their intention to act, which is influenced by psychological factors such as behavioral attitudes, subjective norms, and perceived behavioral control, with attitudes typically serving as mediating variables influencing individuals' intention to act (Ajzen, 2002). Consumers consider a range of factors before making purchasing decisions and evaluate the rationality of their decisions based on these factors. Therefore, this study integrates the theories of perceived risk and planned behavior to investigate the purchase intentions of "REWH", to address relevant issues in the "REWH" domain.

We employ the core concepts of the Theory of Planned Behavior (TPB), including attitude, perceived behavioral control, and subjective norm, to explain the purchase intention of "REWH" consumers. Within this model, attitudes represent individuals' positive or negative perceptions of purchasing "REWH", perceived behavioral control represents individuals' perceived control over the purchasing process, and subjective norms represent individuals' beliefs regarding the influence of social and others' expectations on purchasing behavior. Furthermore, we consider incorporating the dimension of trust from the Theory of Perceived Risk into the model, which involves the individual's trust in the credibility and reliability of "REWH" providers.

Research assumptions

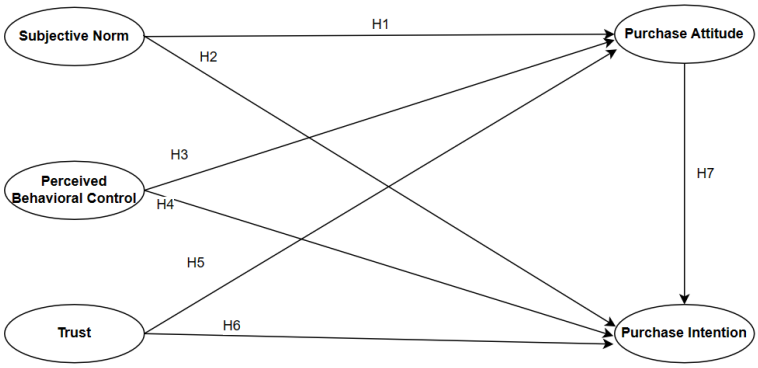

Figure 1 The Research Model

H1: Subjective norms have a positive impact on purchasing attitude.
H2: Subjective norms have a positive impact on purchase intention.
H3: Perceived behavioral control has a positive impact on purchasing attitude.
H4: Perceived behavioral control has a positive impact on purchase intention.
H5: Trust has a positive impact on purchasing attitude.
H6: Trust has a positive impact on purchase intention.
H7: Purchasing attitude has a positive impact on purchase intention.

Research approach

In this study, we employed a quantitative research method and targeted individuals aged 60 and above in Guangzhou and Foshan as the subjects for data collection. We distributed surveys in local parks, chess rooms, streets, and other areas.

Questionnaire Design

The survey questionnaire consists of two main sections: personal demographic information and research variables. In the personal information section, we collected details such as gender, age, education level, occupation, and income. The research variables section includes five dimensions: subjective norms, perceived behavioral control, trust, purchasing attitude, and purchase intention.

Please note that each research variable is measured using a Likert scale of 1 to 5. In this scale, 1 denotes "strongly disagree," 2 denotes "disagree," 3 denotes "neutral," 4 denotes "agree," and 5 denotes "strongly agree." Please assign a score to indicate your viewpoint based on the perceived importance.

Variable Measurement

To ensure the quality of the survey, this study meticulously designed the measurement items for each variable in the theoretical model, drawing from the research outcomes of perceived risk theory and the theory of planned behavior. These items aim to accurately capture respondents' opinions and attitudes regarding relevant issues, thereby providing reliable data support for our study.

Data Collection

In order to ensure the stability and reliability of the study, we conducted a rigorous sample size calculation. According to Jackson (2003), the sample size should be at least 10 to 20 times the number of model variables. For the 18 variable questions in this study, 360 research samples are required according to the 20-fold standard. However, considering the possibility of sample depletion or invalid data in the actual operation, we ended up actually sending out 429 questionnaires. We also refer to the results of the literature survey by Schumacker and Lomax (2004), who found that many studies select 250 to 500 samples as a suitable sample size when using structural equation models (SEM). This finding further supports our sample size decisions.

Through a stratified sampling method, we conducted an offline paper survey among the elderly aged 60 and above in Guangzhou and Foshan. A total of 420 questionnaires were collected. By eliminating invalid questionnaires, we randomly selected 360 valid questionnaires for follow-up analysis. Such sample size and sampling method ensure the stability and reliability of the results and provide sufficient data support for subsequent analysis. The specific characteristics of the samples are presented in Table 1.

Table 1 Basic information of sample

Variable	Options	Frequency	Percent
Gender	Male	181	50.3
	Female	179	49.9
Age	60-69	252	70.0
	70-79	108	30.0
	Above 80	0	0
Educational level	elementary school and below	71	19.7
	High school/technical secondary school	173	48.1
	College and undergraduate	78	21.7
	Graduate student or above	38	10.5
Occupations	Civil servant or public institution personnel	218	60.5
	Business operator or senior management	23	6.4
	Enterprise employee	23	6.4
	Freelancers	45	12.5
	Others	51	14.2
Monthly income	5000 yuan and below	35	9.7
	5000-10000 (including 10000 yuan)	251	69.7
	10000-15000 (including 15,000 yuan)	37	10.3
	15000-20000 (including 20000 yuan)	37	10.3

Data Analysis

1. Reliability and Validity Testing of the Scale

This study utilized the SPSS 27.0 and Amos 27.0 to conduct reliability analysis on the questionnaire, using Cronbach's Alpha coefficient to assess the data's reliability (Aldahwan & Ramzan, 2022). If the Cronbach's Alpha value is > 0.9, it indicates excellent reliability; if the Cronbach's Alpha value is > 0.8, it suggests good reliability. The results of the reliability analysis of the questionnaire showed an overall Cronbach's Alpha value of 0.893, which is greater than 0.8, indicating good overall reliability of the questionnaire.

Table 2 Reliability analysis

Cronbach's Alpha	N of Items
.893	18

This study conducted a construct validity test on the questionnaire using SPSS 27.0 and Amos 27.0. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were employed to assess whether the data was suitable for factor analysis. The Bartlett's test of sphericity yielded a significance value of 0.00, indicating that the data is highly suitable for factor analysis. Additionally, the KMO measure resulted in a value of 0.867, further supporting the appropriateness of the data for factor analysis.

Table 3 KMO and Bartlett's test

KMO sample appropriateness measure		.867
Bartlett sphericity test	Chi-square	4453.983
	Df	153
	Sig.	.000

2. Confirmatory factor analysis

Confirmatory Factor Analysis, abbreviated as CFA, is conducted to examine construct validity, discriminant validity, and model fit (Alavi et al., 2020). In this study, computer software will be used to conduct Confirmatory Factor Analysis on the aforementioned samples.

Model fit degree

The chi-square degree of freedom ratio is used for comparing the model fit between different models. A smaller chi-square degree of freedom ratio indicates a higher model fit. Strictly speaking, when the chi-square degree of freedom ratio is less than 3, it indicates an ideal model fit, and more leniently, when it is less than 5, it suggests an acceptable model fit (Kline, 2023).

The goodness of fit index (GFI), normed fit index (NFI), comparative fit index (CFI), and Tucker-Lewis index (TLI) values range from 0 to 1, where GFI and AGFI values typically need to exceed 0.9, with values closer to 1 indicating a higher model fit (Bentler, 1982).

Root means square error of approximation (RMSEA) is an important model fit indicator in recent years. Bentler (2000) indicates that an RMSEA below 0.05 suggests an ideal fit, while Hu and Bentler (1999) recommend that RMSEA should be less than or equal to 0.06. Values between 0.05 and 0.08 also indicate a good fit, while a value exceeding 0.1 suggests a poor model fit (Hu & Bentler, 1999).

As indicated in Table 4, all the indicators of this model meet the standard, signifying a good model fit.

Table 4 Confirmatory factor model fit metrics

Fit index	χ^2/df	RMSEA	GFI	AGFI	NFI	TLI	CFI
Reference standards	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9
Result	1.832	0.045	0.939	0.916	0.976	0.971	0.976

Aggregation validity

As indicated in the convergent validity, factor loadings should be greater than or equal to 0.5, with values above 0.7 being preferable; the average variance extracted (AVE) should be above 0.5; and the composite reliability (CR) should be greater than 0.7 to determine the convergent validity (Hair, 2009).

As shown in Table 5, it is evident that the standard factor loadings for subjective norms (GF), perceived behavioral control (XW), purchase attitude (TD), trust (XR), and purchase intention (YX) are all above 0.7. Additionally, the composite reliability (CR) values are all above 0.7, and the average variance extracted (AVE) values, when rounded to three decimal places, are all above 0.5. In combination with the context, as AVE is greater than 0.5 and CR values are greater than 0.7, it indicates high convergent validity, thus affirming that this questionnaire exhibits good convergent validity.

Table 5 Aggregate validity indicators

Latent variables	Observation indicators	Factor loading	S.E.	Z	P	CR	AVE
GF	GF1	0.771				0.903	0.699
	GF2	0.86	0.064	18.378	***		
	GF3	0.828	0.062	17.369	***		
	GF4	0.881	0.052	18.849	***		
XW	XW1	0.8				0.841	0.639
	XW2	0.805	0.064	15.95	***		
	XW3	0.793	0.065	15.414	***		
TD	TD1	0.751				0.900	0.693
	TD2	0.808	0.068	16.882	***		
	TD3	0.853	0.072	17.209	***		
	TD4	0.91	0.066	18.287	***		
XR	XR1	0.82				0.844	0.643
	XR2	0.789	0.059	15.705	***		
	XR3	0.796	0.059	15.674	***		
YX	YX1	0.869				0.901	0.695
	YX2	0.811	0.045	20.082	***		
	YX3	0.81	0.046	19.694	***		
	YX4	0.844	0.042	21.136	***		

Note: GF: Subjective Norm; XW: perceived behavioral control; TD: Purchase Attitude; XR: Trust; YX: Purchase Intention

Distinguishing validity

The square root of AVE values can indicate the clustering of factors, while correlation coefficients demonstrate the relationships between them. If the clustering of a factor is significantly stronger than its absolute correlation with other factors, it indicates good discriminant validity. If the AVE square root of a factor is greater than the absolute value of its correlations with other factors, and all factors exhibit this conclusion, it suggests good discriminant validity.

Reviewing Table 6, the diagonal and bolded values represent AVE, while the remaining values represent Pearson correlation coefficients. Looking at the purchase intention (YX), the AVE value of 0.695 is greater than the maximum absolute correlation coefficient of 0.377, indicating good discriminant validity. Trust (XR) has an AVE value of 0.643, which is higher than the maximum absolute correlation coefficient of 0.392, suggesting good discriminant validity. Purchase attitude (TD) with an AVE value of 0.693 exceeds the maximum absolute correlation coefficient of 0.403, demonstrating good discriminant validity. Similarly, perceived behavioral control (XW) has an AVE value of 0.639, greater than the maximum absolute correlation coefficient of 0.443, indicating good discriminant validity. Lastly, subjective norms (GF) with an AVE value of 0.699 exceed the maximum absolute correlation coefficient of 0.443, signifying good discriminant validity. It is evident that this questionnaire exhibits good discriminant validity.

Table 6 discriminative validity indicators

	YX	XR	TD	XW	GF
YX	0.695				
XR	0.344	0.643			
TD	0.377	0.35	0.693		
XW	0.342	0.392	0.403	0.639	
GF	0.333	0.319	0.369	0.443	0.699

Note: GF: Subjective Norm; XW: perceived behavioral control; TD: Purchase Attitude; XR: Trust; YX: Purchase Intention

In summary, the questionnaire data in this study demonstrate good discriminant validity, convergent validity, and model fit indices. Therefore, the confirmatory factor analysis model for this study has been depicted using computer software, as illustrated in Figure 2.

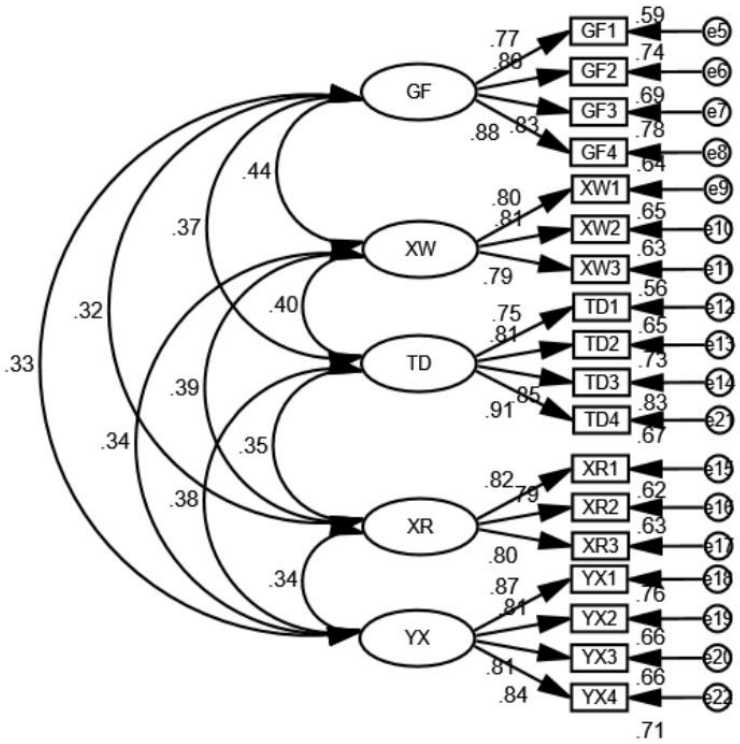

Figure 2 Confirmatory factor analysis diagram of this paper

Structural Equation Model (SEM)

The structural equation model (SEM) fit indices in this study provide several fit measures, each with its own reference standard for assessing the goodness of fit of the SEM (Collier). The ratio of χ^2/df (chi-square to degrees of freedom) is 2.762 (less than 3), which falls within the recommended range and indicates a good model fit, signifying that the structural model is consistent with the observed data. The observed value of RMSEA (root mean square error of approximation) is 0.066, well below the preferred value of 0.08, meeting the standard and emphasizing the suitability of the model. The GFI (goodness-of-fit index)

result of 0.907 exceeds the benchmark of 0.9, indicating a satisfactory fit of the model based on this measure. The AGFI (adjusted goodness-of-fit index) of 0.876, exceeding the benchmark of 0.85, further confirms the adequacy of the model. For the NFI (normed fit index), TLI (Tucker-Lewis Index), and CFI (comparative fit index), values greater than 0.9 indicate a good fit. The derived values are 0.922, 0.938, and 0.948, confirming a good fit of the model with the data, as shown in Table 7.

Table 7 Fitting data of structural equation model

Fit index	χ^2/df	RMSEA	GFI	AGFI	NFI	TLI	CFI
Reference standards	<3	<0.08	>0.9	>0.85	>0.9	>0.9	>0.9
Result	2.762	0.066	0.907	0.876	0.922	0.938	0.948

The indicators described in Table 7 provide compelling evidence for the fit of the structural model with the data, indicating that the model effectively captures the presumed relationships between constructs. The fit indices are consistent with established benchmarks, bolstering confidence in the SEM's representation of the underlying theoretical framework. In summary, Table 7 demonstrates the robustness and effectiveness of the structural equation model employed in this study. The consistency of the results with established benchmarks enhances the credibility of the research, ensuring that subsequent interpretations and conclusions drawn from the SEM are rooted in a statistically sound foundation. As a result, the SEM model proposed in this study is presented in Figure 3.

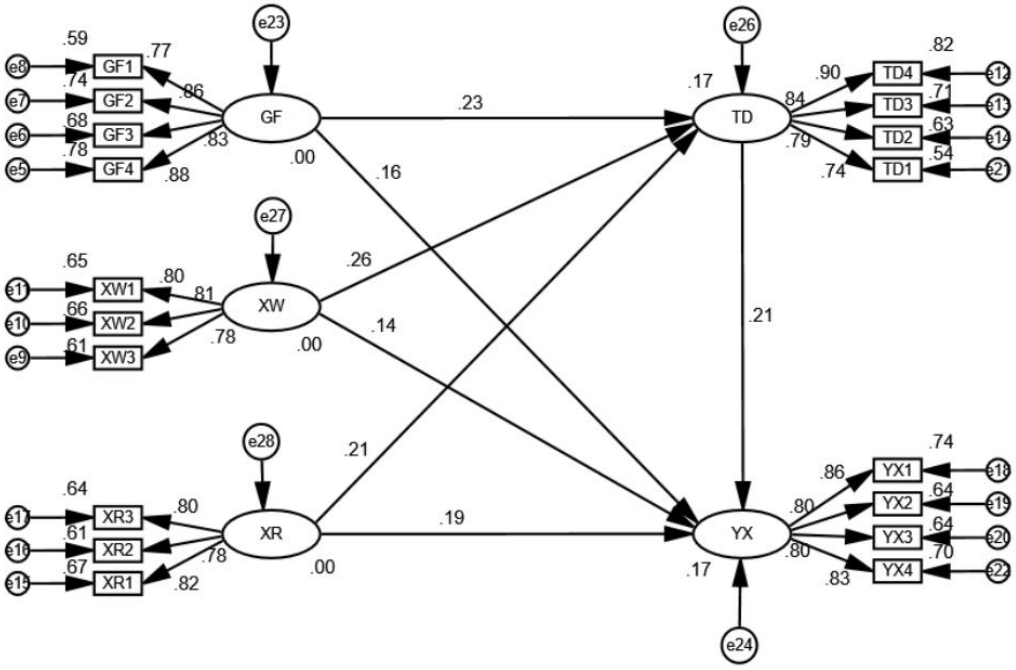

Figure 3 Structural Equation model (SEM) model

- Hypothesis Testing

The results of the path relationship test are presented in Table 8. The standardized coefficients corresponding to H1 through H7are 0.248, 0.175, 0.277,0.151,0.216, 0.192, 0.211respectively. It is worth noting that the p-value for each hypothesis is less than 0.001, indicating that all hypotheses have passed the test significantly.

Table 8 Verifying the path relationship

Hypothesis	Path	Standardization coefficient(β)	S.E.	C.R.	P	Hypothesis testing
HH1	TD<---GF	0.248	0.061	4.083	***	establish
HH2	YX<---GF	0.175	0.063	2.803	0.005	establish
HH3	TD<---XW	0.277	0.065	4.245	***	establish
HH4	YX<---XW	0.151	0.068	2.229	0.026	establish
HH5	TD<---XR	0.216	0.058	3.721	***	establish
HH6	YX<---XR	0.192	0.06	3.18	0.001	establish
HH7	YX<---TD	0.211	0.058	3.619	***	establish

Note：***P ＜ 0.001; **P ＜ 0.01；*P ＜ 0.05

Conclusion

This study, based on questionnaire surveys and statistical analysis of the samples using computer software, validated influential factors and explored the inherent connections between these factors. The research indicates that subjective norms and perceived behavioral control significantly and positively impact the purchase intention of "REWH". Notably, the influence of subjective norms is slightly greater than that of perceived behavioral control. Moreover, both subjective norm and perceived behavioral control further influence the purchasing intention of "REWH" consumers through the mediating variable of purchase attitude. Additionally, trust significantly and positively impacts the purchasing intention of "REWH" consumers. Finally, although purchase attitude significantly and positively influences consumers' intention to purchase "REWH", the impact is not absolute or strong, as the significance of these two factors is not high.

Recommendations

In the context of an increasingly aging population, the emerging "REWH" market has gained widespread attention. The development of "REWH" is a long-term process that requires collaborative efforts from multiple stakeholders, including the government, businesses, financial institutions, and consumers. It is recommended that the government increase support for "REWH", companies enhance their core competitiveness, financial institutions innovate financial products and services, and consumers make informed purchasing decisions. It is believed that with concerted efforts from all parties, the "REWH" market can achieve healthy, stable, and prosperous development. Additionally, attention should also be paid to the sustainable development of the "REWH". As the aging population intensifies, the demand for "REWH" will continue to grow. Thus, considerations on achieving environmental sustainability and social justice in this process are crucial. In promoting the development of the "REWH" market, it is essential to focus on environmental sustainability and social justice. It

requires joint efforts from the government, "REWH" companies, financial institutions, and consumers to drive the healthy development of the "REWH" market.

Limitations and future study

Similar to other studies, this research has certain limitations. Firstly, the survey was conducted in a specific time period and offline, resulting in a relatively concentrated and homogeneous sample. To enhance the generalizability of the research, it is recommended to expand the temporal dimension of the sample and widen the scope of the survey in future research. Secondly, this study's sample age group is mainly concentrated in the population aged 60 and above, with relatively limited exploration of middle-aged individuals' intentions to purchase "REWH". Therefore, research on the purchase intention model of middle-aged individuals for "REWH" would be an important direction, helping us to more comprehensively understand the purchasing preferences of consumers in different age groups."

Furthermore, purchase intention for "REWH" is influenced by numerous factors. In future research, it is important to broaden the research perspective and consider other potential factors that may influence purchase intention for "REWH" to obtain more in-depth and accurate research conclusions.

References

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32*(4), 665-683. https://doi.org/10.1111/j.1559-1816.2002.tb00236.x

Alavi, M., Visentin, D. C., Thapa, D. K., Hunt, G. E., Watson, R., & Cleary, M. (2020). Chi-square for model fit in confirmatory factor analysis. *Journal of Advanced Nursing, 76*(9), 2209-2211. DOI: 10.1111/jan.14399

Aldahwan, N. S., & Ramzan, M. S. (2022). Quadruple Theories Based Determinants and their Causal Relationships Affecting the Adoption of Community Cloud in Saudi HEI. *Bio Med Research International,* https://doi.org/10.1155/2022/2382535.

Bentler, P. M. (1982). Confirmatory factor analysis via noniterative estimation: A fast, inexpensive method. *Journal of Marketing Research, 19*(4), 417-424.

Bentler, P. M. (2000). Rites, wrongs, and gold in model testing. *Structural Equation Modeling, 7*(1), 82-91.

Chen, J. (2019). *Research on the development of Guangdong senior housing real estate from the perspective of polycentric governance theory*[Master's thesis, South China University of Technology].

Gongyan.com. (2023). *China's senior care industry market size will reach 9,852 billion yuan in 2023, of which senior care real estate will account for 15.7%.* https://www.gonyn.com/industry/1453405.html (in Chinese)

Guangdong People's Congress Network. (2022). *Suggestions on actively responding to the aging of the population and strongly supporting the development of home care.* http://www.rd.gd.cn/rdz t/jyblgzyxal/3/content/post_167930.html (in Chinese)

Hair, Jr., J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2009). *Multivariate Data Analysis.* (7th ed.). Prentice Hall.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55. http://dx.doi.org/10.1080/10705519909540118

Jackson, D. L. (2003). Revisiting sample size and number of parameter estimates: Some support for the N:q hypothesis. *Structural Equation Modeling: A Multidisciplinary Journal, 10*(1), 128-141. https://doi.org/10.1207/S15328007SEM1001_6

Kline, R. B. (2023). *Principles and practice of structural equation modeling* (5th ed.). Guilford.

Office of the Seventh National Census Leading Group of the State Council. (2021). *Bulletin of the Seventh National Census.* http://www.stats.gov.cn/sj/tjgb/rkpcgb/qgrkpcgb /202302/t20230206_1902005.html (in Chinese）

Schumacker, R. E., & Lomax, R. G. (2016). *A Beginner's Guide to Structural Equation Modeling* (4th ed.). Routledge.

Pang, Z. (2020). *Research on Public attitude Formation Path of risk Technology based on Institutional Trust*[Ph. D, Southwest Jiaotong University].

Viklund, M.J. (2003). Trust and Risk Perception in Western Europe: A Cross-National Study. *Risk Analysis, 23*(4), 727-738.

Zhang, J. (2016). *Problems and suggestions for the development of senior care real estate in my country.* https://www.wenmi.com/article/pyvcql00bgdy.html (in Chinese）

Zhao, X. (2016). Research on existing problems and countermeasures of the elderly care industry in Guangdong Province. *Journal of Changsha University, 30*(4), 36-38.