

# A Study of Perceived Justice in the Relationship Between Complaint Response and Customer Satisfaction: Perspective on the Real Estate Enterprise Customers in the Yangtze River Delta

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## Abstract

With the deepening of China's information age, the rapid development of network technology integrates various Internet resources for service providers, making implementing online complaint responses possible. Therefore, use the Internet to establish the necessary complaint response mechanism, improve customer satisfaction, and help real estate enterprises enhance competitiveness and improve performance. Based on the equity theory and the Internet background, this study constructs a relationship model between customer complaint response and customer satisfaction in real estate enterprises in the Yangtze River Delta. According to the complaint response characteristics, this study is divided into material, spiritual and information remedies. This study adds the dimension of informational justice based on distribution, interaction and procedural justice. Complaint response and satisfactory justice can adjust their positive impact on customer satisfaction through controllability, internal and external attribution and stability attributes. This study designs the corresponding scales based on the dimensional information of complaint response, perceived justice and complaint attribute. In this study, professional questionnaires were filled in and published on the website, surveys were conducted, data were collected, and Amos18.0 and SPSS 19.0 software was used to analyze the data. This study concludes that the real estate complaint response under the Internet can be divided into three dimensions: material, spiritual, and information. Qualified justice can be divided into four dimensions: distributed justice, procedural justice, interactive justice, and informational justice. The complaint attribute can be divided into three dimensions: internal-external, controllable, and stability. Complaint response positively impacts customer satisfaction through perceived justice; the complaint attribute has a moderating effect between the complaint response and the perceived justice.

**Keywords:** *Complaint Attribution, Complaint Response, Customer Satisfaction, Perceived Justice.*



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## Introduction

After 2008, with the further strengthening of macro-control and the implementation of a series of policies, the real estate industry has ushered in a new round of rapid development, which is mainly reflected in two aspects: the continuous rise of real estate prices and the still strong demand for commercial housing. The construction of housing security system is a key real estate reform project promoted by the 12th Five Year Plan, which aims to properly solve the housing problems of low - and middle-income families; The main tasks of the 13th five year plan have changed: in terms of real estate regulation, we will focus on expanding diversified demand, promoting industrial development, and improving the construction of long-term mechanism. In addition, new urbanization has put forward higher requirements for the change of demand in the real estate market. It is necessary to establish a conversion mechanism between guaranteed housing and commercial housing to meet consumers' demand for housing through a market-oriented way. The marketing strategy of real estate enterprises in China's first tier cities and regions began to change from offline mode to online mode. Now, from promotion to marketing, the real estate industry can see the traces of its transformation by the Internet, both in terms of products and services. Taking the Yangtze River Delta as an example, in less than a decade since 2014, all aspects of the real estate industry in this region have been fully penetrated by the Internet. As the real estate industry accepts this upsurge of transformation, the new Internet marketing model is gradually valued and used by real estate developers. Guo Yuewen et al. (2019) believe through research that the misunderstanding of complaint response focuses on the lack of a good understanding of the difference between complaint response and treating customer complaints, the difference between external complaint response and deep-seated complaint response, the difference between behavior and abnormal behavior that can be known in advance, and the difference between subjective behavior and objective behavior. Guo Mingli and Li Zhan (2019) proposed that complaint response has a great impact on customer loyalty, and is also closely related to their industry and customer values.

## Problem statement

In essence, customer satisfaction reflects a psychological state of customers, which comes from the comparison between customers' feelings and their expectations when they consume a certain product or service of the enterprise. In other words, "satisfaction" is not an absolute concept, but a relative concept. Yang Qiang et al. (2021) classified the key factor of retaining customers as the complaint response strategy, which shows the position and role of complaint response in enterprise competition. Ge lihuaiming et al. (2019) proposed that enterprises should strengthen complaint response to improve their competitiveness. Yang Jing (2019) analyzed the customer complaint management system of relevant service enterprises from the following two aspects: the first is the customer complaint processing system, the second is the collection and analysis of customer complaint information, the third is the organizational learning mechanism and continuous improvement, and the fourth is organizational authorization. Liang Xinhua (2020) empirically studied the relationship between customer value orientation and customer complaint behavior. The research results show that customer value orientation has a significant impact on customer complaint behavior. They also involved the theory of customer complaint planning behavior in the process of empirical analysis. Tennyson (2020) proposed that the complaint response has the characteristics of real-time and initiative, and proposed that the discussion of several issues of the complaint response (such as "first success" and "second success", internal complaint response, authorization and so on) should attract our attention. Yuan Wenlong (2002) proposed a solution to customer complaints. First of all, we must pay attention to customers, treat every customer complaint seriously, and listen to customers' complaints; Solve problems in the shortest time and within a time

acceptable to customers; At the same time, we should also authorize front-line employees to deal with problems flexibly when they encounter customer complaints. Majie et al. (2021) proposed a customer satisfaction model based on inconsistent expectations and information. And it is believed that the main influencing factors of customer satisfaction are the expectation of the service quality he should obtain when consuming before consumption, and the quality of the service effect he feels after the consumption experience, and then the gap between the two. If the customer's experience after consumption is better than he imagined, the customer will evaluate the consumption experience as satisfactory, otherwise he will be dissatisfied. Jinxiaopu et al. (2021) studied the misunderstanding of complaint response, especially pointed out the misunderstanding of many people, including some scholars. This misunderstanding is mainly manifested in the failure to distinguish customer complaints from complaint response. Yang Bo (2019) proposed the generalized complaint response and the narrow complaint response, and defined them. Among them, they believe that the narrow complaint response is an immediate and proactive measure taken by service providers after service errors. The foregoing scholars believe that the generalized complaint response not only includes an immediate and proactive measure taken by the service provider after the occurrence of service failure, but also includes the proactive measures taken before the occurrence of service failure, such as pre prediction and control of possible factors, as well as the process and method of handling customer complaints and complaints.

### **Research questions**

This study builds a relationship model between real estate complaint response and customer satisfaction based on the internet background, integrates the theory of perceived justice and service attribution theory, proposes that perceived justice is the mediator and complaint attribute is the moderator, and designs a relationship model between real estate complaint response and customer satisfaction under the internet background. This study adopts the methods of literature research, questionnaire survey and data statistics to study the dimension of real estate complaint response in the model and the relationship model between real estate complaint response and customer satisfaction, so as to provide guidance for real estate enterprises in the Yangtze River Delta from the theoretical and practical aspects. Based on this, the research questions of this study are as follows.

- (1) What is the relationship between complaint response and perceived justice?
- (2) Does complaint attribution have a moderating effect in the relationship between complaint response and perceived justice?

### **Research objectives**

From the research background, it can be concluded that the customer complaints of real estate enterprises are not conducive to the development of enterprises. In order to effectively prevent and reduce the loss of customers, we must attach great importance to the problem of customer service quality, and take timely and effective remedial measures for customers who experience service failure, so as to promote customers to regain satisfaction. The research on complaint response is of great value both in theory and practice, especially in the macro industry of real estate industry in China's first tier cities. Exploring the impact of complaint response on customer satisfaction plays a very obvious role in improving the economic and social benefits of real estate enterprises. Based on this, this study puts forward research objectives for the specific organization group of real estate development enterprises in the Yangtze River Delta.

- (1) To explore the relationship between complaint response and perceived justice.
- (2) To explore the moderating effect of complaint attribution in the relationship between complaint response and perceived justice.

## Assumptions

First of all, it should be noted that the data collected in this study are from real estate enterprises in the Yangtze River Delta. In view of the unique geographical location of the Yangtze River Delta, the research conclusions drawn from the cost study are not necessarily universal in the whole of China. Secondly, this study only considers the influence of mediator perceived justice and moderator complaint attribute on this study, and does not consider the error caused by other factors on this experiment. Finally, because the particularity of this study lies in the complaint response, that is, the main object of the questionnaire is the people who have experienced customer complaints, which means that it is necessary to screen out the people who have experienced customer complaints before the beginning of the experiment, that is, to find the people who have experienced customer complaints among the customers who rent and buy houses. The focus of this study is to demonstrate the mediating effect of perceived justice, and the direct effect of complaint response on customer satisfaction is not included in the focus of this study, so this study will not explore the direct effect of complaint response on customer satisfaction.

## Literature review

### Complaint Response

The dimensional characteristics of complaint response summarized by different scholars are quite different, which is attributed to the different entry points of scholars in the research process of complaint response. Secondly, the research industries are also different. In order to distinguish different complaint response dimensions, scholars have divided the service industry into traditional industries (catering industry, hotel industry, aviation industry, etc.) and e-commerce industry, as shown in Table 1-1.

**Table 1-1 Dimension of complaint response in traditional service industry**

Researcher	Complaint response of traditional service industry
Bell & Zemke (1987)	Apology, timely recovery, understanding, symbolic compensation and follow-up.
Bitner, Booms & Tetreault (1990)	Tangible compensation, reliability and attention.
Ross, Goodwin & Watkins (1995)	Convenience of complaint, tangible compensation and apology.
Smith, Bolton & Wagner (1999)	Remedy initiative, compensation in kind, response speed and apology.
Yang Pengyu & Xie Jing (2019)	Response speed, tangible compensation, e-mail quality, remediation tracking.
Jia Junbo (2019)	Explanation, communication, system, feedback, compensation.
He Sixue & Wang Lei (2019)	Speed of remedy, apology, tangible compensation.

In the era of Internet, customer complaints in the service industry have also received widespread attention. Zeithaml et al. (2002) studied customer complaints in online shopping and summarized customer complaints as products and information can not be delivered in time and low service quality. Forbes (2005) believes that customer complaints include the inability to respond quickly to customer needs and the slowness of the entire service delivery system. This study summarizes the research on complaint response from multiple perspectives as follows.

**Table 1-2 Dimension of the service industry complaint response in the internet era**

Researcher	The dimension of the Internet service industry complaint response
Wang Lili, 2019a; Wang Lili, 2019b	Material Remedy、 Spiritual Remedy.
Jiang Caijun et al., 2019	Material remedy, spiritual remedy, response speed.
Hu Youhua, 2019	Active remedy and passive remedy.
Ye Yunzhe, 2019; Vázquez-Casielles, Iglesias and Varela-Neira (2012)	Property remedy, social comparison, property remedy + social comparison.
Kuo and Lee (2009)	Utilitarian remedy and symbolic remedy.

The tangible compensation after the customer's complaint is material remedy, while the apology and response speed mainly provide psychological and spiritual comfort, namely spiritual remedy. According to Hart et al. (1990), the first step in studying effective complaint response measures is to provide convenient and fast communication channels for customers to complain. In this study, complaint response in the Internet environment also needs to consider adding the dimension of information remedy. Information remedy refers to the exchange and feedback of relevant information provided by service providers to customers. According to traditional industries, the most useful means of implementing complaint response are tangible compensation, including various material remedies such as giving small gifts. In the Internet age, not only should we increase material remedies, but also we should use online marketing to give gifts to customers and give customers high-level members, which will bring good results. Service providers should pay more attention to customer complaints, otherwise serious consequences will be caused. The direct and effective means to improve customer satisfaction is to quickly respond to customer complaints and deal with them; Modest and friendly attitude and timely apology can make customers feel highly valued, and the sincere attitude of service personnel can comfort customers psychologically and spiritually; At the same time, information repair needs to be added, and timely and sufficient information communication with consumers can be achieved through telephone, chat tools (QQ, wechat, etc.), e-mail, etc. Based on the above analysis, this paper believes that the feature dimension division method of complaint response proposed by Jiang Caijun et al. (2019) is suitable for complaint response in the real estate industry under the background of the Internet. The complaint response is divided into material remedy, spiritual remedy and information remedy.

### Perceived Justice

In the early stage, equity theory was widely used in psychology, education and other fields. Clemmer (1988) found that the fairness theory is also applicable to the interaction with customers in the process of studying how enterprises can better serve customers. Later, it was Blodgett et al. (1993) who introduced the fairness theory into the complaint response theory. They predicted and explained consumers' attitudes and behavioral intentions after customers' complaints by studying the coefficient of perceived justice. Later, King et al. (2002) took the equity theory as a bridge between grafting remedies and customer secondary satisfaction. And pointed out that after the occurrence of customer complaints, customers always hope that businesses can stand on a fair position, reasonably evaluate material and spiritual losses, and take appropriate remedial measures to win back loyalty and satisfaction. Oliver and Swan (1989) found that the whole process of complaint response is closely related to fairness. When customers compare with other customers, they perceive low fairness, and dissatisfaction or even complaints appear. Many studies have confirmed that the evaluation of fairness significantly affects customer satisfaction and reconstruction willingness. Table 1-3 shows the dimension division of perceived justice.

**Table 1-3 Dimensions of Perceived Justice**

Blodgett & Tax, 1993	Outcome Equity and Interactional Justice
Wang, 2019	Outcome Equity and Process Equity
Sparks & McColl-Kennedy, 2001	Outcome Equity, Procedural Justice and Interactional Justice
Wang, 2019; Cheung & Law, 2008; Song, 2019	Outcome Equity, Procedural Justice, Interactional Justice, and Informational Justice

Based on the internet era, informational justice and distributive justice have received more attention. Since every link of the complaint response will produce a fair plot, consumers are more concerned about whether the internet marketing method, that is, whether the promises made are fulfilled. Likewise, procedural justice is more prominent. Since the way customers

complain may be via Weibo, WeChat, or QQ, that is, online complaints, this new type of complaint or complaint process puts higher requirements on the sensitivity and response speed of complaint response. For customers to gain the perception of procedural justice, service providers need to adapt faster and more optimized remediation strategies. This study chooses Wang (2019)'s point of view and divides perceived justice into distributive justice, procedural justice, interactional justice, and informational justice.

### **Complaint Attribution**

Based on the concept of customer complaint to analyze the complaint attribute, experts and scholars at home and abroad have determined the concept of customer complaint based on the actual situation of service work and from the perspective of expectation, satisfaction and integration. Storbacka et al. (1994) believed that the service requested by customers failed to be fulfilled, and the service provider lacked due efficiency and patience in the service process, resulting in the service result being lower than the minimum value of customers. At this time, customer complaints occurred. Keaveney (1995) pointed out that customers are not satisfied with the service provided by the business and do not agree with the service system designed by the business, which is the meaning of customer complaints. When the service fails, more than 90% of consumers are in a state of forbearance and choose to remove the service merchant from the trust list. The representatives of the comprehensive perspective are Smith, Levesque, Bolton and other scholars. Smith et al. (1999) believed that if the service provider cannot meet the requirements of customers in providing services, or the customer expectation is too low, the negative emotion and negative reputation of customers will damage the image of the enterprise and damage the enterprise economy, which is service failure. Levesque et al. (2000) based on objective facts, pointed out that customers will compare the actual situation with the expected value to evaluate the perceived service quality and satisfaction. If the difference between the expected and the actual situation is too large, service failure will occur. Bolton and Mattila (2015) further divided service errors from the perspective of process and result. Result errors refer to businesses' failure to perform specified services according to the predicted state, which damages the interests of customers; Process error is to emphasize that any kind of performance may occur in the whole service process. By combing the above views, the author believes that customer complaint refers to the feedback behavior caused by the fault of the service provider or various external factors that may cause failure in the service process, and this behavior reduces customer satisfaction. Because different objects are selected and different methods are used, the attribution dimensions divided by scholars are very different. Folkes (1984) divided the complaint attribute from three aspects: stability, attribution and controllability. Attribution aims to list the internal and external factors that cause failure. Stability refers to analyzing the importance of each failure state through optimization, and finally determining the cause of failure through weight comparison. Controllability refers to the ability to predict and optimize the extent to which customer complaints may be controlled. Weiner (1985) further pointed out that complaint attribute is the customer's judgment on stability, attribution and controlling attribution. For possible reasons, the most important thing is to choose the best strategy to solve the customer complaints that have occurred. Bitner (1990) divided the complaint attribute into two major factors: stability and controllability. Zhan Yudong (2019) inferred the reasons for the failure from the perspective of customers themselves and the external environment in the process of exploring the complaint attribute and the pre response mechanism. Boshof and Leong (1998) further refined internal-external attributes into internal causes, external causes and possible third-party causes. Based on the needs of research, this paper uses Weiner (1985) to divide the complaint attribute of the real estate industry into internal-external attribute, stability attribute and controllable attribute.

## **Customer Satisfaction**

The quality management system document expounds the concept of customer satisfaction in detail. The so-called satisfaction refers to the deviation between the expected value and the actual value of customers' service. Oliver (1996) proposed that customer satisfaction is a degree of consistency between customer expectations and actual perceived values, which has a positive impact on customer satisfaction. Kotler (2001), a marketing expert, defines customer satisfaction as different emotions such as happiness and loss generated by comparing the expected effect with the perceived result. Engel (1993) pointed out that satisfaction is the customer's evaluation of the whole service process, pre purchase and post purchase. The purpose of pre purchase evaluation is to study the gap between pre purchase expectation and performance perception. Post purchase evaluation refers to an evaluation in which service perception exceeds expectation. Customer satisfaction is regarded as a function, and the independent variables are product quality, service effect and product price. Bu Lingwei et al. (2019) believe that customer satisfaction, as a kind of consumer psychological response, is the result of the comparison between customers' expectations before purchase and the actual perceived effect after consumption. OZGEN and Kurt (2012) discussed whether the level of customer satisfaction fluctuated during and after consumption. This paper agrees with Bu Lingwei et al. (2019).

## **Methodology**

### **Research design**

First of all, from the perspective of the research philosophy of this study, this study belongs to the concept of positivism, which is more inclined to draw conclusions from the perspective of science, that is, the existing new scientific system is based on experiments and observations. The concept of positivism provides a systematic logical framework for this study and is more conducive to the experiment. Secondly, from the perspective of research type, according to the general classification, this study belongs to quantitative research, that is, the research conclusion is obtained by data collection; From the nature of the study, this study belongs to analytical research. The focus of this study is to explore the impact of complaint response on customer satisfaction under the internet background, that is, to explore the impact of independent variables and dependent variables, and to introduce moderator and mediator to fill the academic gap in this field. From this point of view, this study is an analytical study; From the perspective of research purpose, the purpose of this study is to fill the academic gap, that is, the research field is not perfect under the existing theoretical background. From a practical point of view, the purpose of this study is to better improve the complaint response measures of real estate enterprises based on the Internet, so as to meet customer satisfaction and bring higher economic benefits to enterprises. Secondly, from the nature of the study, the focus of this study is to analyze the impact of strategic procurement on suppliers' participation in new product R & D, that is, the impact relationship and mechanism between independent variables and dependent variables, so it belongs to analytical research. Thirdly, from the perspective of research purpose, the research purpose of this study is specifically to analyze the mechanism of action between independent variables and dependent variables, supplement the academic gaps in this area, and improve enterprise performance. That is, the research conclusion has practical significance for improving enterprise performance and encouraging suppliers to participate in new product development. Therefore, it belongs to applied research. On the other hand, from the research approach of this study, the research objectives have been set at the beginning of the study, that is, this study conforms to the reasoning from general to special, and a set of research hypotheses to be demonstrated are proposed. The realization and completion of the research objectives of this study are evaluated according to the establishment of the research paper, which also shows that the research of this study follows the deductive research

path. Finally, from the perspective of study design, the study design type of this study belongs to the causal study in the conclusive study design. That is, the core purpose of this study is to explore the impact of the complaint response of real estate enterprises on customer satisfaction under the internet background, and draw the research conclusion from it, so as to improve customer satisfaction in the form of complaint response.

### Questionnaire Design

This study divides the real estate complaint response under the internet background into three dimensions: material remedy, spiritual remedy and information remedy. This study refers to the corresponding mature scales abroad and designs various items of complaint response. The specific measurement method is shown in Table 3-1.

**Table 3-4 Initial Measurement Scale for Complaint Response**

Dimensions	Content of measurement
Material Remedy	In response to service failure, real estate service personnel provided various tangible compensation schemes (including online purchase discounts).
	In response to the service failure, the real estate service personnel made gifts or money compensation (on-site collection and online distribution).
	Real estate service personnel have made substantial efforts to cope with service failure.
Spiritual Remedy	When I complained (including on-site complaints, online complaints and telephone complaints), the real estate service personnel quickly expressed regret.
	When I complain, the real estate service personnel or senior management personnel formally apologize.
	During the complaint response, the real estate service personnel fully considered my psychological feelings (including online and offline consumers).
Information Remedy	In case of service failure, the real estate service personnel actively provided me with various information communication channels (including telephone, network and information).
	In case of service failure, real estate service personnel can timely inform relevant information such as the reason for service failure.
	During the complaint response process, the real estate service personnel can timely inform the progress of the problem and other handling conditions.

Source: Author

This study adopts the dimensions of Smith and Mattila, including results, procedures, interactions and informational justice; The general scale proposed by Bolton and Wagner (1999) is adopted. The specific measurement methods are shown in Table 3-2.

**Table 3-5 Initial Measurement Scale for Customer Perceived Justice**

Dimensions	Content of measurement
Distributive Justice	On the whole, I think the results of the real estate service personnel handling the problems are fair.
	I think the results of the real estate service personnel are fair compared with the losses I have suffered.
	Based on my experience, I think the handling results of real estate service personnel are fair compared with others.
	The final result of the service failure of the real estate service personnel met my needs.

Procedural Justice	I think the management of the service failure of the real estate service personnel is very efficient.
	Real estate service personnel really pay attention to the feelings of customers.
	The management mechanism of real estate service personnel enables them to respond to this situation quickly.
	The management policies of the real estate service personnel are fair and effective.
Interactional Justice	The communication between the real estate service personnel and me was very smooth.
	The real estate service personnel understood my difficulties.
	The attitude of the real estate service personnel is modest.
	The real estate service personnel worked hard to solve problems for customers.
Informational Justice	In case of service failure, the real estate service personnel and I can communicate with each other in a timely and effective manner through multiple channels (Internet, telephone, information) to explain the relevant information about the remedy.
	When the service failed, the real estate service personnel explained to me in detail the reasons for the service failure.
	When I have doubts about the complaint response provided by real estate enterprises, they can give me good answers (on-site, online and telephone).

Source: Author

This study draws on the research results of Fu et al. (2021) and divides complaint attribution into three dimensions: attribution, controllability and stability attribution. Controllable attribute emphasizes whether the cause of service failure can be controlled in advance; Whether the service provider concerned by the stability attribute often fails; Internal-external attribution discusses who should be responsible for the cause of service failure. On the basis of the complaint Attribution Scale, we interviewed customers who had experienced service failure in the real estate industry under the Internet environment, and revised and determined the scale. The specific measurement scale is shown in table 3-3.

**Table 3-6 Initial Measurement Scale for Complaint Attribution**

Dimensions	Content of measurement
Internal-external Attribution	I think this mistake was caused by the real estate company.
	I think this mistake was caused by the outside of the real estate company.
Controllable Attribution	I think the real estate company can prevent this failure.
	I think real estate can take measures in advance to avoid this service failure.
Stability Attribution	I think this kind of service failure often happens in the real estate company.
	I think this kind of service failure will happen again in the real estate company.

Source: Author

This study focuses on the relationship between complaint response and customer satisfaction in the Internet environment, and uses perceived justice as an intermediate variable. The content of this questionnaire is mainly composed of three parts. This questionnaire first briefly introduces the purpose of the survey to ensure the anonymity and non-commercial nature of

the questionnaire, and further ensures the authenticity of the data through the filling in of the participants. The first part is the screening part. In order to screen out those who have experienced the failure of real estate services under the Internet to participate in the survey, the investigators were first screened through six simple questions. The second part is the main part of the questionnaire. During the process of filling in, the respondents need to fully recall their experience of complaint response to real estate failure under the Internet. In order to facilitate filling in, this part includes complaint response scale, perceived justice scale and service failure attribution scale. The options and problems involved are studied in detail and classified according to the grade. Therefore, the people who need to be investigated must make judgments according to their own needs and use the score grade to express the real situation. Finally, the third part of the study is personal basic information. Through the collection of the basic information of the participants in the survey, the quality of the data is improved and the accuracy of the data is ensured for the follow-up analysis of the study.

### Validity and Reliability test

#### Internal Consistency Reliability Test

The reliability analysis effect of large sample (formal sampling survey) is as follows:

##### (1) Reliability of complaint response

The variable of Cronbach's alpha is far beyond the range of 0.7, and even CITC is only slightly close to 0.7. Due to the complexity of the data, it is difficult to draw a conclusion and make the data meet the standard requirements, which indicates that the formal test data is reliable. Through repeated investigation and inspection, the reliability of the data is greatly improved. The specific data of complaint response, CITC and reliability analysis are shown in Table 3-9.

**Table 3-7 CITC and Reliability Analysis of Complaint Response of Formal Scales**

Dimension	Item	CITC	$\alpha$ if item deleted	Cronbach's $\alpha$
Material Remedy	A2	0.763	0.867	0.871
	A3	0.770	0.868	
Spiritual Remedy	A4	0.745	0.880	0.894
	A5	0.736	0.871	
	A6	0.738	0.879	
Information Remedy	A7	0.752	0.895	0.903
	A8	0.697	0.892	
	A9	0.773	0.903	

Source: Author

##### (2) Reliability of perceived justice

Table 3-10 shows the specific data of perceived justice, CITC and reliability analysis.

**Table 3-8 CITC and Reliability Analysis of Perceived Justice of Formal Scales**

Dimension	Item	CITC	$\alpha$ if item deleted	Cronbach's $\alpha$
Distributive Justice	B1	0.734	0.868	0.834
	B2	0.727	0.898	

	B3	0.765	0.865	
	B5	0.754	0.895	
Procedural Justice	B6	0.784	0.903	0.849
	B7	0.732	0.834	
Interactional Justice	B8	0.724	0.865	0.903
	B9	0.697	0.797	
	B10	0.711	0.791	
Informational Justice	B11	0.735	0.895	0.881
	B12	0.715	0.892	
	B13	0.716	0.903	

Source: Author

### (3) Reliability of complaint attribution

The specific data of complaint attribution, CITC and reliability analysis are shown in Table 3-11.

**Table 3-9 CITC and Reliability Analysis of Complaint Attribution of Formal Scales**

Dimension	Item	CITC	$\alpha$ if item deleted	Cronbach's $\alpha$
Attribute	C1	0.767	0.786	0.821
	C2	0.721	0.745	
Controllability	C3	0.734	0.774	0.807
	C4	0.772	0.725	
Stability	C5	0.745	0.859	0.835
	C6	0.834	0.703	

Source: Author

According to Tables 3-9, 3-10 and 3-11, it is concluded that the reliability of the formal test data is excellent and has passed the reliability test.

### 3.4.2 Content Validity Analysis

Validity refers to the degree of coincidence between the results measured by the questionnaire and the contents of the questionnaire. The higher the degree of coincidence, the better the effect of the questionnaire. The opposite conclusion will get the opposite result. During this period, the efficiency relationship between content and structure is validity. For the test of large sample validity, appropriate and reasonable measures should be taken to improve, and the core content of the test must be the rationality and standardization of the options. The questionnaires in this study are all well-developed questionnaires, in which the relationship between variables is closely linked. Before this questionnaire survey, the literature and theoretical basis provided by experts and scholars from relevant departments were summarized, and the contents of the questionnaire were accurately improved and perfected on this basis. Therefore, the

questionnaire research conducted in this study has been carefully analyzed and highly reliable. It can not only provide customers with a large number of reliable data references, but also provide theoretical basis for subsequent research. In short, the structural validity in this study is consistent, and the conclusions of the hypothetical factors in the questionnaire rely on exploratory and experimental analysis. The summary of the analysis method of this study is to draw a conclusion through verification, that is, not only the kmo test should be carried out for each data variable, but also the Bartlett sphericity test should be carried out for the changes between variables. As long as the comprehensive research is carried out, the customer satisfaction can be improved.

## Findings

### Profile of respondents

Through the questionnaire survey, the basic information of the respondents was statistically analyzed. The basic characteristics of the samples are described in table 4-1.

**Table 4-10 Table 1 Descriptive Statistics of the Basic Characteristics of the Sample**

Item	Option	Number of people	Proportion
Gender	Male	300	60%
	Female	200	40%
Age	Under 20 years old	50	10%
	21-30 years old	250	50%
	31-50 years old	150	30%
	51 years old and above	50	10%
Educational level	Junior high school and below	100	20%
	High school or technical secondary school	100	20%
	College and undergraduate	250	50%
	Postgraduate and above	50	10%
Occupation	Civil servant	50	10%
	Student	100	20%
	Enterprise employees	250	50%
	Self employed	100	20%
Annual income	Less than 30000	100	20%
	30000-60000	100	20%
	60000-100000	200	40%
	Over 100000	100	20%

Source: Author

The following points can be summarized from the above table for the description of the basic characteristics of the sample: First, it can be concluded from the table that the male to female ratio of the respondents is close, and the gender ratio is close to 1:1. Therefore, there is a reasonable gender ratio in the sample of this study. Second, most of the participants in the survey are young people. Third, 60% of respondents have college education or above; Most of the respondents in the survey are company employees and self-employed persons, and 60% of them have an annual income of more than 60000, which indicates that the samples surveyed are enterprise employees with stable income and high-income level.

**The relationship between complaint response and perceived justice**

Table 4-2 shows the fitting indexes of customer satisfaction and second-order complaint response / perceived justice.

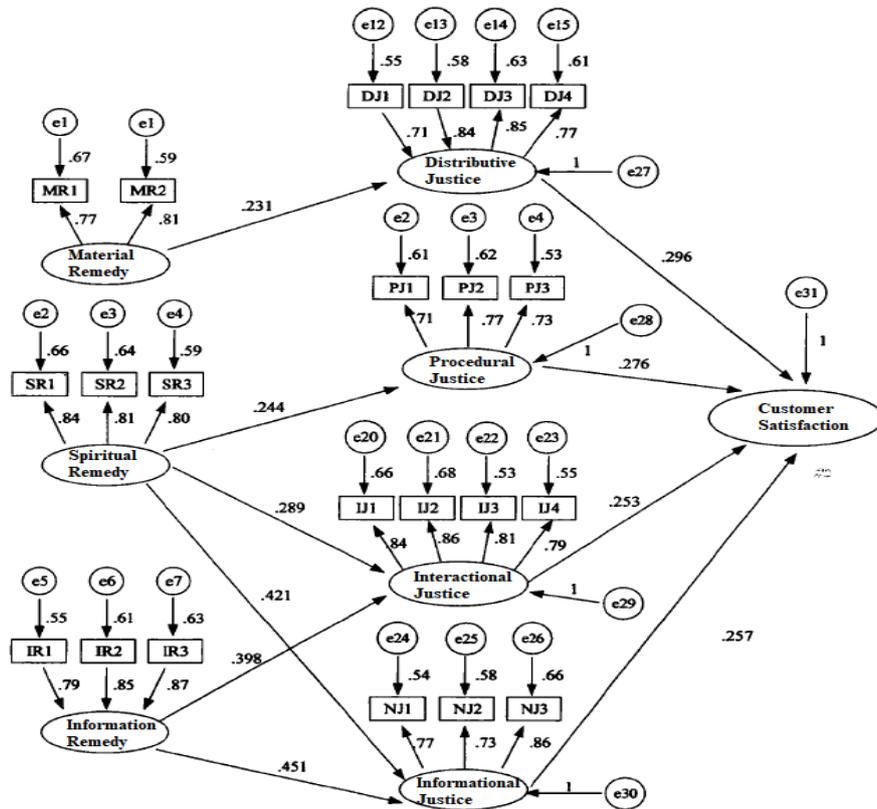
**Table 4-11 Fitting Indicators of Customer Satisfaction and Second-order Complaint Response/Perceived Justice**

Index	CMIN/DF	GFI	CFI	RMSEA	AGFI	NFI
Fitted value	2.156	0.961	0.922	0.0487	0.955	0.913

Source: Author

**Results**

The models of customer satisfaction, first-order three-dimensional complaint response and first-order four-dimensional customer perceived justice and the model fitting results are shown in Figure 4-1 and Table 4-3.



**Figure 4-1 Structural Equation Model Fitting Diagram of Customer Satisfaction and Complaint Response/Perceived Justice**

Source: Author

Table 4-3 shows the fitting indexes of customer satisfaction and first-order complaint response / perceived justice.

**Table 4-12 Fitting Indicators of Customer Satisfaction and First-order Complaint Response/Perceived Justice**

Index	CMIN/DF	GFI	CFI	RMSEA	AGFI	NFI
Fitted value	1.987	0.914	0.963	0.042	0.967	0.921

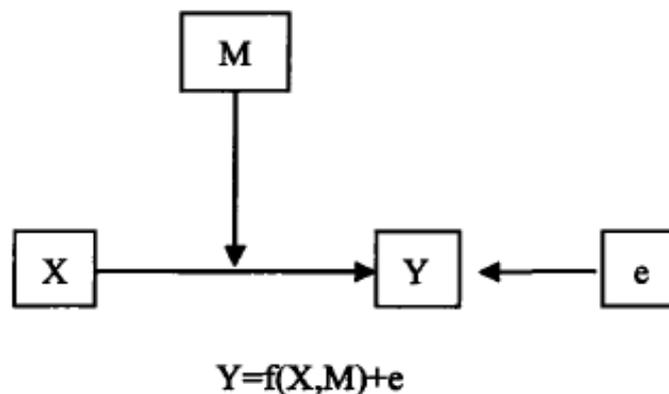
Source: Author

According to Table 4-3 selection criteria of various fitting indicators of customer satisfaction and first-order complaint response / perceived justice, all fitting indicators meet the standards, indicating good adaptability. It can be seen that the first-order model of this study has a good fit. It further shows that the hypopaper of the first-order model is accepted. Table 4-4 shows the normalized path coefficients between material remedy (MR), spiritual remedy (SR), information remedy (IR), distributed Justice (DJ), procedural justice (PJ), interactive justice.

### The moderating effect of complaint attribution in the relationship between complaint response and perceived justice

#### Analysis

Yu (2020) gave the essence of the moderator. He pointed out that the dependent variable Y forms a mapping relationship with the independent variables X and M. if the variable M can correct the functional relationship between X and Y, then M is the moderating factor. As shown in Fig. 4-2.



**Figure 4-2 The Moderating Effect**

Source: Yu, 2020

M's modulating effect is mainly realized in three steps:

Step 1: Regression operation between X, m and function y to obtain the corresponding measurement number R12;

Step 2: the regression operation between the function y and X, m and the product term XM to obtain the corresponding measurement number R22;

Step 3: compare the two measured values R12 and R22. If the latter is much larger than the former or the partial regression coefficient of the product term XM is significant, the mapping effect of m on Y and X is obvious.

The hypopaper proposed in this study is that the complaint attribute variable is the moderator of the relationship between the complaint response and the customer's perceived justice, and the moderating effect is studied by using the above three steps. This part is completed by spss19.0. M (I = 1,2,3) represents three different attribution dimensions, X (I = 1,2,3) represents three different complaint response dimensions, and Y (J = 1,2,3,4) represents four different perceived justice dimensions.

(1) Analysis of moderating effect of internal-external attribute

According to the above method, first perform the regression operation of M1 (internal-external attribute) and Xi (three dimensions of complaint response) to YJ (four dimensions of perceived justice). Then Xi \* MI is integrated to analyze and compare the previous studies, and the positive and negative proportional relationship between the coefficient and the data is obtained. As shown in table 4-5.

**Table 4-13 Moderating Effect Test Results of Internal-external Attribute on Complaint Response and Perceived Justice**

Regression of Y1 to X1 and M1			Regression of Y1 to X1, M1 and X1M1			
$\beta$ (X1)	$\beta$ (M1)	R <sup>2</sup>	$\beta$ (X1)	$\beta$ (M1)	$\beta$ (X1M1)	R <sup>2</sup>
0.750**	-0.134**	0.486	0.367**	-0.366**	0.311**	0.527
Sig (F)			0.000		0.000	
Regression of Y1 to X2 and M1			Regression of Y1 to X2, M1 and X2M1			
$\beta$ (X2)	$\beta$ (M1)	R <sup>2</sup>	$\beta$ (X2)	$\beta$ (M1)	$\beta$ (X2M1)	R <sup>2</sup>
0.690**	-0.221**	0.311	0.3167**	-0.421**	0.223**	0.327
Sig (F)			0.030		0.012	
Regression of Y3 to X2 and M1			Regression of Y3 to X2, M1 and X2M1			
$\beta$ (X2)	$\beta$ (M1)	R <sup>2</sup>	$\beta$ (X2)	$\beta$ (M1)	$\beta$ (X2M1)	R <sup>2</sup>
0.490**	-0.347**	0.270	0.313**	-0.447**	0.456**	0.376
Sig (F)			0.010		0.003	
Regression of Y4 to X2 and M1			Regression of Y4 to X2, M1 and X2M1			
$\beta$ (X2)	$\beta$ (M1)	R <sup>2</sup>	$\beta$ (X2)	$\beta$ (M1)	$\beta$ (X2M1)	R <sup>2</sup>
0.759**	-0.373**	0.367	0.191**	-0.277**	0.199**	0.543
Sig (F)			0.000		0.044	
Regression of Y5 to X3 and M1			Regression of Y5 to X3, M1 and X3M1			
$\beta$ (X3)	$\beta$ (M1)	R <sup>2</sup>	$\beta$ (X3)	$\beta$ (M1)	$\beta$ (X3M1)	R <sup>2</sup>
0.622**	-0.271**	0.277	0.233**	-0.273**	0.388**	0.493
Sig (F)			0.021		0.022	
Regression of Y6 to X3 and M1			Regression of Y6 to X3, M1 and X3M1			

$\beta$ (X3)	$\beta$ (M1)	R <sup>2</sup>	$\beta$ (X3)	$\beta$ (M1)	$\beta$ (X3M1)	R <sup>2</sup>
0.691**	-0.288**	0.345	0.498**	-0.568**	0.258**	0.638
Sig (F)			0.000		0.003	

Note: \*\* means significant at the 0.01 level

Source: Author

(IJ), informational justice (NJ), and customer satisfaction (CS).

## Conclusion

Under the background of Internet, the real estate complaint response and perceived justice have a significant positive impact. Among them, information remedying has the greatest impact on information justice, with a path coefficient of 0.442. The reason may be that the complaint response of the real estate industry in the information age discussed by us is a kind of temper and test for network users. For enterprises, it is necessary to vigorously train relevant personnel to carry out practical operations and update information for public reference in a timely manner, so as to enable customers to obtain the latest information about services; At the same time, the path coefficient of information remedy to interactive justice is 0.376. Since information justice is developed after studying interactive justice, this also explains the positive impact of information remedy on interaction. (Baik and Lim 2020). The path coefficient related to material remedying is low, 0.135. Under the Internet environment, the possibility of receiving compensation in kind from the complaint response is low. The real estate industry cannot take the return and exchange of goods. When giving gifts, most of them are in the form of Internet or based gifts. The compensation method is limited, and consumers can not perceive the high distribution justice, so the path coefficient is low. (Derby et al. 2021). The path coefficient between spiritual remedy and procedural justice is 0.321. Since procedural justice emphasizes that the customer perceives the quick response of the service provider and the perception of the procedure, it fully reflects the rapidity and convenience of providing remedy; After the service failure occurs, the rapid response to customer complaints can quickly improve the level of customer perceived procedural justice. The convenience of the Internet also enables the realization of spiritual remedy, so the path coefficient is high. The path coefficient between spiritual remedying and interactive justice is 0.2921. The so-called interactive justice refers to whether the investigated information is recognized by the public and whether the transmission channels are reasonable when studying things or objects. Nowadays, spiritual remedying in the information age is mainly reflected in timely apology, modest attitude and psychological compensation, which make customers perceive high interactive justice. The most significant impact from information justice may be that in the Internet environment, the rapid acquisition and sharing of information, sincere and harmonious communication and mutual sincerity can provide consumers with spiritual comfort and enhance customers' satisfaction with the service industry. In the face of fair distribution, it should be noted that the lower impact may be due to the fact that when service failure occurs, the real estate enterprises in the online environment may be less than the traditional real estate industry in compensating customers for gifts or discounts. However, the lower impact does not mean that the distribution justice is not important. As a matter of fact, distributed justice is the basis for improving perceived justice. If distributed justice is too low, it will also have a joint effect, affecting more links to reduce the perception of fairness. (Ma et al. 2021). As mentioned above, the spiritual remembrance of the service industry has a positive impact on the two dimensions of interactive justice and informational justice of perceived justice, which indicates that in the Internet era, the service industry provides comfort to customers at the spiritual level, among which the consumer psychology and good service attitude have a sense of service quality, thus improving customer

satisfaction. Spiritual remedying affects procedural justice (Cao et al. 2021). The low correlation coefficient between procedural justice and customer satisfaction may be due to the fact that under the online environment, whether real estate enterprises are sincere enough to apologize, whether they pay more attention to customer feedback, and whether they have a relatively fast response speed to customer complaints. In the Internet age, both customers and the real estate industry need to make efforts to achieve higher satisfaction. For example, if the consumers think that the real estate enterprises can control the errors, the customers are more likely to think that the errors are caused by the real estate enterprises, that is, caused by internal factors, which will lead to lower customer satisfaction (Baliga et al. 2021). If the customer thinks that the real estate enterprise has no control over the service failure, that is, there are errors in the consumption service caused by external uncontrollable factors, it is excusable, and the customer's satisfaction will also be considered as appropriate. If the consumers find that the real estate enterprise will still fail in service due to the same reason in the future after corresponding investigation or communication with other consumers, they will choose other relevant enterprises. At this time, if the service industry fails to analyze the root cause of service failure in a timely manner and make corresponding commitments, it is likely to completely lose the trust of customers. In conclusion, the moderating effect of three different attribution dimensions is established. (Rashid et al. 2021). Although the research in the field of complaint response has used a large number of literature and relevant theories provided by experts and scholars, and also concluded through the questionnaire that the real estate complaint response promotes customer satisfaction through fairness in the Internet environment, there are still many shortcomings, mainly in the following aspects.

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