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## **A RESEARCH OF KNOWLEDGE MANAGEMENT AND EMPLOYEE SERVICE ABILITY ON THE PERFORMANCE BASED ON SHENZHEN REAL ESTATE AGENCY**

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### **Abstract**

*This paper complements the quantitative research of real estate agency in China. The main body of this study is the real estate agency in Shenzhen, trying to find the endogenous power to improve enterprise performance. Combined with the basic theory, expert interviews and the author's work experience, four variables were identified, namely: employee service ability and knowledge management are two independent variables, technological innovation is the intermediary variable, and enterprise performance is the dependent variable. Data were collected through questionnaires, and confirmatory factor analysis was performed by structural equation analysis (AMOS 26). In terms of the measurement model, the results show that the research dimensions of the four latent variables are valid. The "relationship ability" of employees' service ability is relatively the best, and the "response-ability" needs to be strengthened in brokerage institutions. In knowledge management, "knowledge sharing" is relatively the best, while "knowledge search" needs to be improved. In technological innovation, "market innovation" performs better on the whole, while "process innovation" is relatively weak. "Human performance is relatively good in enterprise performance, while financial performance still needs to be improved. The limitations of this study are: first, the vast majority of brokerage agencies are non listed companies, and the information of corporate performance is not open. Second, service capability, knowledge management and technological innovation are interdisciplinary concepts. The interdisciplinary concept is an opportunity and a challenge: it can see the limitations of its discipline and increase the value of dialogue and discussion with different fields. Third, this study did not consider individual factors (such as attitude), other*

*situational factors (such as different leadership styles) and customer interaction factors. Fourth, collect static data. It also points out the direction for future research.*

**Keywords:** real estate agency, employee service ability, knowledge management, technological innovation, enterprise performance.

## INTRODUCTION

### Background of Study

In the field of real estate agency for more than ten years, the author has been interested in managing brokerage institutions and enterprise performance. The first chapter is the starting point of the full text. Firstly, it expounds on the motivation of the research from the perspective of theoretical and practical background. There are different opinions on the reasons and dynamic mechanism of enterprise performance in the industry, which is difficult to unify. Looking up the relevant literature, there is relatively little research on the corporate performance of brokerage agencies. First, due to the need for work, and second, due to the need for theoretical guidance, the author began researching brokerage institutions. This dissertation hopes to test the research hypothesis by introducing the basic theory and empirical methods to find an endogenous dynamic path to support the sustainable development of brokerage institutions from an academic point of view.

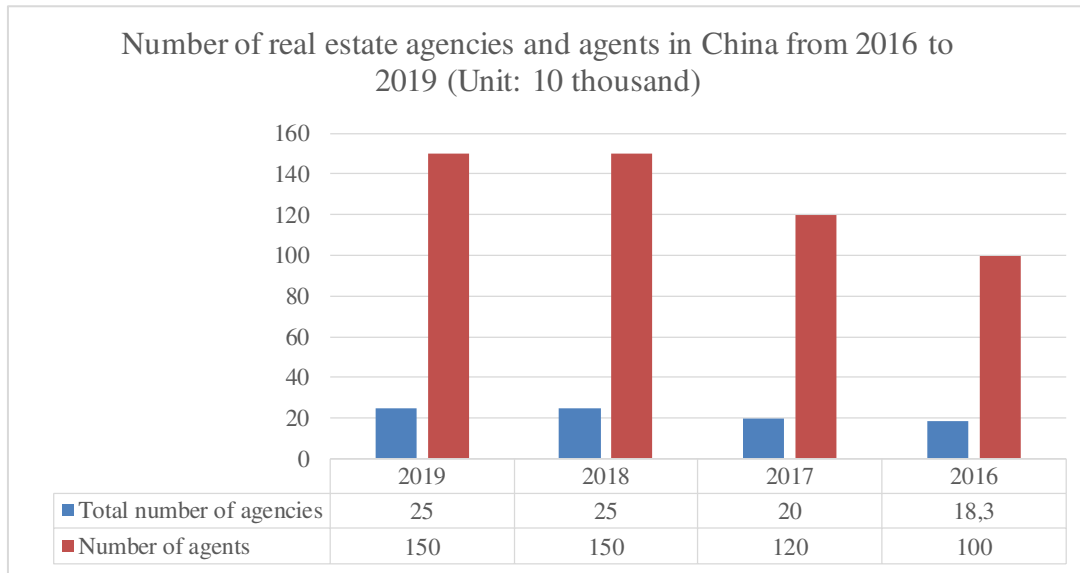
Combined with management theory and industry expert interviews, this dissertation refines four potential variables: enterprise performance, employee service ability, knowledge management and technological innovation, and expounds on the current situation of the four variables respectively, and then focuses on the research problems and research objectives proposed in this dissertation, that is, to verify the specific content of "ability behaviour enterprise performance". The measurement model and structural model of the four latent variables will be verified by structural equation.

In addition, the first chapter also expounds on the significance of the full text in theory and practice. The significance of this study lies in: in theory, first of all, it complements China's relevant research through quantitative analysis. There is a lack of systematic and confirmatory research on the performance of brokerage firms in China. With the help of both academic analysis framework and practical experience, this study makes a systematic confirmatory factor analysis on the enterprise performance of Shenzhen brokerage institutions. It constructs an internal driving force model for the enterprise performance of Shenzhen brokerage institutions, which plays a guiding role in practice. In this dissertation, we can extend the corresponding policies from the aspects of staff service ability, knowledge management, and technological innovation to improve brokerage institutions' competition level and reduce the price war and the horde tactics. Secondly, based on six basic theories, this study sets the theoretical framework of

brokerage firm performance and verifies the application of basic theories in the field of Chinese brokerage firms. Thirdly, this study verifies the controversial theory of whether knowledge management applies to brokerage institutions and confirms that knowledge management has a significant effect on the corporate performance of brokerage institutions in Shenzhen. Fourth, this study follows the definition of "technological innovation" in academic circles and expands the management of "technological innovation" in brokerage institutions.

Real estate agency service has a long history in China. The Chinese word "broker" was first seen in the Han Dynasty more than 2200 years ago, which means "Gangchang FaDu (laws and regulations)". The new meaning of "care and management" came into being in the Wei, Jin, Southern and Northern Dynasties, and the meaning of "business" came into being in the Yuan, Ming and Qing Dynasties. Li (2017) found that up to now, the meaning of "brokerage" has disappeared in the Han Dynasty, the Wei, Jin, Southern and Northern Dynasties, and only retained the meaning of Song, Yuan, Ming and Qing Dynasties. In the Tang Dynasty, there were full-time real estate agents, while in the Song Dynasty, real estate agents were indispensable to the transaction of farmland and house.

Since the 1990s, Chinese enterprises have been more dependent on real estate, but it is not only Chinese enterprises. Enterprises in other countries, such as South Africa (Ntene, 2020), also like to add real estate strategy into their corporate strategy to increase the stock price. With China's real estate industry development, real estate market transactions are active, and the number of intermediary service agencies is increasing rapidly. At the same time, with the shrinking supply of new housing, stock housing transactions have become the dominant trend. In this context, the industry status of real estate developers will tend to weaken, the focus of the real estate industry will shift from development to service for life and work, and brokerage agencies will become an important link in the real estate industry chain. The real estate agency has become an important part of the sustainable development of the real estate market. According to the statistics of the China Society of real estate appraisers and real estate agents, as of June 2019, there are 250000 brokerage institutions in China, with more than 1.5 million employees (as shown in Figure 1-1). More than 60% of China's real estate transactions are transacted through brokerage agencies, and more than 80% of them are in the first and second-tier cities.



**Figure 1-1 Number of real estate agencies and agents in China**

Source: China Society of Real Estate Appraisers and Realtors, 2020

### Problem Statement

Combined with the research on insurance brokerage institutions, Luo (2015) summarized three characteristics of Brokerage Institutions: Organization (communication, independence, self-discipline), technical knowledge (professionalism, impartiality, objectivity) and commercial operation (compensation, profitability, economy). Although there are different academic evaluation standards for "enterprise performance", in the industry, Shenzhen brokerage agencies generally use "annual total Commission" (from now on referred to as "Commission") to measure enterprise performance; that is, they usually use financial indicators to measure enterprise performance.

Perfect real estate brokerage services include housing transactions, foreclosure, assistance in handling loans, assistance in handling the transfer of ownership and so on. The whole process is devoted to the accumulation, dissemination and creation of real estate transaction-related knowledge, which has higher requirements for professionalism. Therefore, as early as 2007, Chen and others proposed that real estate brokerage can be classified as knowledge-intensive services in a broad sense. Yu et al. (2008) believe that real estate agents should be the knowledge service crowd whose production source is the public's trust. Malaysian scholar Azmi et al. (2015) believe that real estate institutions are knowledge-intensive organizations. From the perspective of knowledge management, the way for brokers to solve the transaction process is to effectively code the existing knowledge or implement personalized strategy, actively open and share it, and form a proposal and a set of solutions through intellectual services, which is also in line with the content of knowledge management. Qi et al. (2019) believe that as customers increasingly pursue

personalized services, providing non-standard, suitable and creative services is the key factor for enterprises to establish long-term contact with customers.

There is little research on "knowledge management" in Chinese brokerage institutions. In terms of knowledge management research itself, Yu et al. (2020) think that the research structure of knowledge management in China includes knowledge management subject, knowledge ontology, knowledge management process, knowledge management service object and so on; The research context involves enterprise knowledge management performance, enterprise knowledge chain, enterprise knowledge management process, enterprise knowledge gap and so on. In addition, some results of other industries show that knowledge management does not directly affect enterprise performance, such as the research of Fang et al. (2020), so the performance of knowledge management in Shenzhen brokerage agencies needs confirmatory analysis.

### **Research Questions**

The research questions were established as below:

- (1) Verify whether the service ability of employees has a positive impact on the performance of brokerage firms? That is the direction and extent of the independent variable one on the dependent variable.
- (2) Verify whether knowledge management has a positive impact on the performance of brokerage firms? That is the direction and extent of independent variable two on the dependent variable.

### **Scope of the Study**

This dissertation discusses business management in the field of business. Although there are many brokerage agencies, the discussion on consumers, social organizations and government departments is not in the scope of this dissertation.

This dissertation collects data through questionnaire, so corresponding public data does not affect this study. The brokerage institutions in Shenzhen include both listed and unlisted institutions and online institutions without physical stores.

As for the boundary of innovation, Hansen and Wakonen (1997) pointed out that not doing things in a completely different way is the boundary condition of the relationship between enterprise innovation process and performance; that is, complete business model subversion is not within the scope of this dissertation. At the same time, the concept of "technological innovation" is different from that of "marginal improvement", which belongs to the effect of scale growth.

## LITERATURE REVIEW

### Enterprise Performance

From the practical experience of Shenzhen brokerage agencies, a single performance indicator can not evaluate the enterprise: Based on the failure case of "Aiwu Jiwu" (the highest valuation once reached one billion US dollars), the single indicator of "valuation" is not suitable for the performance management of brokerage agencies. Based on the failure cases of "Zhongtian real estate" and other similar brokerage institutions (the number of stores has expanded rapidly to thousands, covering major cities in China, etc.), the single index of "market share" is not suitable for evaluating the performance of brokerage enterprises. From the development track of Hong Kong brokerage agencies from prosperous to weak, "cost control" is important, but it is not the only index to evaluate the advantages and disadvantages of enterprises.

The "enterprise performance" in this dissertation is the operating efficiency and performance of the comprehensive ability of the brokerage agency in a certain period of operation, and it is the combination of financial performance and non-financial performance of the brokerage agency. The corporate performance of brokerage institutions is significantly affected by China's real estate transaction system and real estate industry policy. Unlike the private ownership of property in other countries and regions, China's land is public ownership, so the real estate transaction system has obvious Chinese characteristics; There are different administrative departments in charge of land and housing management in China, and their management rules are also different. The central government department for land management is the Ministry of natural resources. The central department for real estate management is the Ministry of Housing and urban-rural development, which is quite different from the real estate transactions in many countries and regions that the same department manages. The lack of the latest and unified standardized real estate information database is the main reason for the delay in real estate transactions (Saul et al. 2020).

**Table 2-1 The structure, function and performance of brokerage agencies in Shenzhen**

Function module	Department	Main function	Department performance
Business department	Housing department	Transaction of new houses and commercial houses in stock	The financial performance of stakeholders is the main one, and the non-financial performance is the secondary one
	Industrial and commercial department	New housing and stock office buildings, factories, shops, garages and other non-residential transactions	
	Online operation department	Mainly online trading	
	Secondary planning department	New house planning, agency and sales	
	Mortgage department	Handle real estate mortgage affairs for buyers	

Function department	Financial department	Accounting registration, financial accounting, financial management, etc	The non-financial performance of stakeholders is the main, and the financial performance is the secondary
	Personnel department	Human resource management and Implementation	
	Administrative department	Headquarters, store decoration, office materials procurement, supplier negotiation, cooperation, etc	
	Marketing department	It mainly includes market promotion, market research, customer service and other functions	
	Forensic department	Legal risk control and treatment, etc	
	IT department	Development, operation, maintenance and upgrade of the information system of brokerage institutions	

Source: Author

Radnejad et al. (2020) found that the modern economy is characterized by the increasing role of non-market actors, such as regulators, social activists, trade unions and the media, which influence the behaviour of for-profit companies. To sum up, Shenzhen brokerage performance is more suitable for symbiosis theory and stakeholder theory. The starting point of enterprise performance is to pay attention to important stakeholders and create value for them instead of just implementing a strategy, which is flexible and self-improvement. According to Freeman's definition, stakeholder theory refers to "any individual or group that can influence or be affected by the realization of organizational goals".

### Employee Service Ability

From the perspective of economics, the service industry is used for the final consumption and intermediate input of manufacturing production, followed by improving manufacturing productivity. The service industry is an endogenous development (Sasaki, 2020). Lin Lei and other scholars (2007) emphasized that service can form an effective strategic tool, and its way is to hinder competitors through differentiation (Levitt, 1969; Myroslaw, 1987; Lancioni & Myroslaw, 1989; Marceau & Martinez, 2002). Service enterprises pay more attention to service. Reniarts et al. (2008) think that service can lock in customers and help obtain new customers. Services that are lower than customers' expectations are regarded as failed services (Sands et al., 2020).

For the research content of "service", Zuo et al. (2017) used the service conflict matrix to solve service management and improved the service process to achieve service innovation. Some scholars use relevant organizational behaviour models, such as the EVLN model, to explain employees' behavioural response to consumers to study the service process. It is difficult for service enterprises to measure service utility because service is intangible and heterogeneous. There are different standards for the composition and measurement of enterprise "service". For example, Brax et al. (2017) proposed a Metamodel for service delivery.

The connotation of service ability is affected by the industry and the main body of the organization. The use of "service capability" is more common in the government and public sectors in China. At present, there is no unified understanding of the connotation of "service capability". Scholars mainly define the concept from the perspectives of resources, process, system, output and organizational role. From the perspective of resources, service capability forces enterprises to transform internal and external resources into customer value. From the perspective of process, service capability is the process of enterprises to meet customer needs. From the perspective of the system, service capability is when the service system provided by the enterprise provides services to customers according to the environment and its own goals. From the perspective of output, service ability is the practical ability to provide intellectual products and services. From the perspective of organizational role, service ability is the ability of enterprises to fulfil social responsibility and achieve performance goals.

**Table 2-8 The connotation of service ability in different industries and business types**

Hospital	Member of university think tank alliance	Online shop	Commercial Bank	Public service
Diagnosis and treatment of difficult and miscellaneous cases	Decision making consultation ability	Service reliability of the online store	Service efficiency	Convenience
CMI (Case Mix Index)	Innovative research capability	Online store service response capability	Service Innovation	Responsiveness
	Collaborative matching capability	Strength of online store service	Service quality	Transparency
/	Think tank management capability	The reputation of online store	Employee loyalty	Law-abiding
/	/	/	Consumer loyalty	Effectiveness
/	/	/	Service incentive	Guarantee

Source: Wei et al., 2021; Zhao, 2019; Guan et al., 2012; Shang, 2012; Lv et al., 2009

Because of the characteristics of real estate brokerage services, this paper regards "employees" as the implementation subject of service ability, based on the following three reasons: first, in practice, whether the transaction or lease transaction, compared with the cooperation between institutions, it depends more on the resource patching ability of employees.

### Knowledge Management

Some scholars believe that "knowledge management" is almost as long as human history. Knowledge management emphasizes that enterprises should build a platform for knowledge exchange, set up relevant systems and mechanisms, and realize knowledge sharing. As a professional term or research discipline, "knowledge management" appeared in the late 1990s, and then it was paid more and more attention by researchers and entrepreneurs. In particular, with the world-famous management consulting companies upgrading knowledge management to



a strategic perspective, knowledge management has made great progress from awareness to implementation (See Table 2-16 in Appendix C).

The development of the strategic management concept promotes the progress of knowledge management. These strategic management concepts mainly include Ansoff's environment theory, Porter's industrial competition theory, Barney's enterprise resource theory, Hammer's core competence theory and David's dynamic competence theory. The purpose of enterprise research on knowledge management is to increase the comparative advantage through knowledge management to improve the organisation's profitability. Many studies have emphasized the connection between knowledge management and organizational learning, such as Antunes (2020). Ryan et al. (2019) explored the reasons for the lack of knowledge management in the Arab region from a national perspective. Antonelli et al. (2020) studied the situation of knowledge management in Europe. China divides "knowledge management" into narrow sense knowledge management and broad sense knowledge management. In a narrow sense, knowledge management refers to the management of knowledge itself, including the creation, acquisition, processing, storage, dissemination and application of knowledge. Knowledge management in a broad sense also includes managing various resources and intangible assets related to knowledge. Shi et al. (2020) believe that the research hotspots in China focus on five aspects: knowledge sharing, transfer and innovation, library knowledge service, enterprise knowledge management, personal knowledge management and knowledge management system; The future research trend is knowledge management under artificial intelligence, knowledge sharing under sharing economy and knowledge service under data-driven. In addition, Zhang et al. (2019) discussed how to break through the dilemma of knowledge sharing through social networks. Huang et al. (2020) believe that blockchain is worthy of attention in the field of knowledge management because it has the characteristics of decentralization, self-operation and sharing, which has a high degree of fit in enterprise knowledge management, especially in the field of knowledge sharing, and will have a high application prospect in the whole field of enterprise knowledge management. Anjaria (2020) discussed the specific measures of knowledge management.

## **METHODOLOGY**

### **Research Design**

This paper collects data through a questionnaire. Questionnaire design around the known dimensions to find the existing questionnaire. After finding the relevant existing questionnaires, fine-tuning is carried out according to the characteristics of Shenzhen brokerage institutions. Considering the time and cooperation of brokers, the questionnaire used in this study is as concise as possible. Based on the literature, three or four measurement models of employee service ability, knowledge management, technological innovation and enterprise performance, which needed to be verified in the future. The analysis software is SPSS 24 and AMOS 26.

In the first and second chapters, based on dynamic capability theory, the hypothesis models of employee service capability, knowledge management, and technological innovation on enterprise performance are constructed. The research method of this dissertation is quantitative analysis, which uses the structural equation for path analysis and regression analysis. The analysis software is AMOS 26.

### Data collection and processing

This study collected data through a questionnaire. The questionnaire is distributed online. The questionnaire is based on the existing scale, and the four dimensions are employee service ability, knowledge management, technology innovation and enterprise performance. The questionnaire dimension is predicted first and then formally tested. After data collection, data processing should be carried out, including processing missing value and screening out extreme value, then descriptive statistics and reliability analysis were carried out. During the process of questionnaire implementation, this paper will also supplement relevant information using the expert interview according to the actual situation.

### Population/Sampling/Unit of Analysis

This paper studies the brokerage agencies in Shenzhen as a whole. As of October 2020, there are more than 2000 brokerage agencies (head office, excluding stores) in Shenzhen. The research sample is the brokerage agency after random sampling. The sampling method was random sampling. The sample design is shown in Table 3-1. It is expected that each institution will invite a staff member to fill in the questionnaire as a representative. According to the requirements of this study, the staff who fill in the questionnaire are set as employees who have worked in Shenzhen brokerage agencies for at least five years, including grassroots employees and managers. According to the research theme of this dissertation, it is not limited to business departments but also functional departments.

**Table 3-1 Sampling design**

Enterprise-scale	Number of interviewees	Percentage
Large enterprises	200	50%
Small and medium enterprises	200	50%
Total	400	100%

Source: Author

**Table 3-12 Measurement of enterprise performance**

Measurement variable	Connotation	Questions
Strategy indicators	Measuring enterprise strategic	1. Compared with the main competitors, our market share is higher

	management and execution	2. Compared with the main competitors, our customer satisfaction is higher
Human resource indicators	Measure human resource management	1. I am highly satisfied with my work 2. Compared with the main competitors, the employee turnover rate is low
Financial indicators	Mainly refers to profitability, asset operation level, solvency and subsequent development capabilities.	1. Compared with the main competitors, our company can achieve a higher number of commercial housing sales 2. Compared with last year, the sales growth rate of new products is higher
Total	Six questions	

Source: Author

### Validity and Reliability Test

The results show that: after SPSS calculation, its reliability meets the requirements of the next step of research, and the prior framework can be analyzed in the next step. The total number of questionnaires was 400, 317 were received, and 315 were valid. This dissertation uses SPSS 24 to test each dimension and overall reliability:

**Table 3-13 Reliability (N=315)**

Content		Result
Whole reliability	Cronbach's Alpha	0.977
Staff service ability (Q7-Q12)	Alpha	0.916
Knowledge management (Q13-Q28)	Alpha	0.969
Technological innovation (Q29-Q32)	Alpha	0.905
Enterprise performance (Q33-Q38)	Alpha	0.918

Source: Author

### Expert interview method

The sampling method of experts is shown in Table 3-19. This dissertation uses three expert interviews. The purpose of the first time is to combine theory and practical experience to construct the influencing variables of brokerage firm performance and interview ten experts. The second use of the "expert interview method" is to improve the questionnaire's items, structure, and quantity. The second questionnaire solicited the opinions of five experts, evaluated the questionnaire from the readability, comprehensibility, content validity and other aspects, and put forward the modification suggestions. The questionnaire was modified according to all the

opinions or suggestions, and the modified questionnaire was fed back to five experts for further evaluation. According to the feedback, the questionnaire can be used for small-scale prediction in the future. In the third interview, five experts were interviewed about the situation after the hypothesis test.

**Table 3-19 Descriptive statistics of expert interview (N=20)**

Variable	Type	Quantity	Percentage (%)
Administrative region	Futian	10	50%
	Longhua	10	50%
Ownership	Private enterprises	15	75%
	State-owned enterprise	1	5%
	Foreign enterprise	4	20%
Scale	< 30	5	25%
	31-200	5	25%
	201-1000	5	25%
	> 1000	5	25%

Source: Author

## FINDINGS

### Profile of Respondents

#### Descriptive statistics

The respondents were mainly from a random sampling of the sampling frame. The sampling frame is provided by Shenzhen real estate agency association, and the list covers more than 80% of the brokerage agencies in the city. The list is complete and ideal for research. In addition, in terms of specific descriptive indicators, according to the statistics of the Shenzhen real estate agency association in recent years, the brokerage industry employees in Shenzhen are mainly young men, and the education level is mainly below bachelor's degree. Although the largest market share of Shenzhen is large enterprises, the number of small and medium-sized enterprises still accounts for more than 90% of the industry. There is only one state-owned real estate agency in Shenzhen, and the others are private enterprises. The sampling in this dissertation follows the above rules. After excluding the invalid data, the effective descriptive statistics are shown in Table 4-1 - Table 4-2.

There are 315 valid samples in this dissertation. The data show that the male respondents are higher than the female respondents. The age of the respondents is mainly between 26 and 35 years old, and some of them are over 45 years old. Most interviewees have more than eight years of industry experience, and their main jobs are brokers and employees of functional departments. Education background is mainly junior college or below. They are mainly from large and

medium-sized organizations. Most of the enterprises sampled are private enterprises. Joint-stock enterprises are looking for houses for Q-Fang, Meilian Property and Shell, respectively.

**Table 4-1 Descriptive statistics of valid questionnaires (N = 315)**

Item		%	Item		%
Gender	Male	61.9%	Experience	5-8 year	30.8%
	Female	38.1%		More than 8 year	69.2%
Age	18-25	8.3%	Position	Brokers, staff of functional departments	53%
	26-35	46.3%		Middle managers	31.4%
	36-45	35.6%		Director and above	15.6%
	>45	9.8%		Business	72%
Education	Below junior college	30.2%	Department	Function	28%
	Junior college	38.1%		Large scale (more than 300 employees)	62.2%
	Bachelor degree	24.4%	Size	Medium-sized (100-299 employees)	14%
	Master degree	7.3%		Small and micro (1-99 employees)	23.8%

Source: Author

**Table 4-2 Descriptive statistics of agencies in valid questionnaires (N = 315)**

	Item	Quantity	Percentage	No. of people	Percentage
Ownership	State owned enterprises	0	0	0	0
	Collective enterprises	0	0	0	0
	Stock company	3	0.9%	3	0.9%
	Private enterprise	312	99%	312	99%

Source: Author

### Expert interview

The descriptive statistics of the methods of the expert interview are shown in Table 3-19. The first interview was about building the influencing variables of the performance of the brokerage institutions and visited ten experts. More than half of experts believe that the performance of the brokerage agencies is mainly related to the external market transaction. Most experts think that the internal factors that affect the performance of enterprises are management level and organizational culture. Experts referred to "training" and "human resources". They believe that institutions are now generally faced with talent shortages and talent shortage ("young lack of industry experience and high turnover rate, poor working habits of middle-aged employees"). Some experts believe that the size of stores is positively related to enterprise performance; that is, the more stores are more conducive to improving enterprise performance, the main reason is

that stores are equivalent to channels and can better access housing sources. So based on the first interview, this dissertation constructs the relationship among the staff service ability, knowledge management, technology innovation and enterprise performance, combining with their own work experience and relevant literature.

### Research Objective 1: Verify the Measurement Model of Service Ability and Its Structural Model on Enterprise Performance

#### 4.2.1 Analysis

**Table 4-3 Measurement model of employee service ability and its regression coefficient with enterprise performance**

			Estimate	S.E.	C.R.	P	Label
ep	<---	ser	.513	.097	5.262	***	
pr	<---	ser	1.000				
XY	<---	ser	1.191	.062	19.060	***	
GW	<---	ser	1.010	.062	16.288	***	
XS	<---	ser	1.006	.059	17.141	***	
strategy	<---	ep	1.000				
HR	<---	ep	.827	.042	19.644	***	
fin	<---	ep	.965	.043	22.359	***	
pr	<---	ser	0.813				
XY	<---	ser	0.896				
GW	<---	ser	0.802				
XS	<---	ser	0.832				

Source: Author

It can be seen from Table 3-20 that the average value of "relationship ability" in employee service ability is the highest, indicating that relationship ability performs relatively best in employee service ability. The variance of "response-ability" is the largest in employee service ability, which indicates that the level of quickly and efficiently meeting the heterogeneous service needs of consumers is still uneven, and it needs to be strengthened in brokerage agencies.

The use of "employee service ability" in this dissertation stems from "ability theory" and "dynamic ability theory". The academic hypothesis logic of this dissertation is based on the fact that only those who have the corresponding ability have more opportunities to obtain the corresponding resources; Only by taking certain actions can we achieve higher performance. The conclusion of this dissertation verifies the previous literature and academic hypothesis: even in brokerage agencies, employee service ability is also positively promoting enterprise performance. In addition, professional ability, identification ability, corresponding ability and relationship ability are the reflection indicators of employees' service ability.

Figure 3-1 and Table 4-3 show that the path coefficient of employee service ability on enterprise

performance is 0.423 ( $P < 0.001$ ), indicating that employee service ability has a significant positive impact on enterprise performance. Hypothesis H1 is verified, which also supports previous literature research. At the same time, Table 4-3 shows that the measurement model of employee service capability and enterprise performance is verified; that is, employee service capability is reflected by four dimensions, such as recognition ability, assuming H6, H7, H8 and H9 are established.

### Research Objective 2: Verify the Measurement Model of Knowledge Management and Its Structural Model on Enterprise Performance

**Table 4-4 Measurement model of knowledge management and its regression coefficient with enterprise performance**

			Estimate	S.E.	C.R.	P	Label
ep	<---	Knowledge	.479	.117	4.089	***	
creating	<---	Knowledge	1.000				
sharing	<---	Knowledge	1.076	.050	21.702	***	
search	<---	Knowledge	1.163	.060	19.230	***	
creating	<---	knowledge	.835				
sharing	<---	knowledge	.931				
search	<---	knowledge	.864				

Source: Author

Table 3-20 shows that the average value of knowledge sharing is relatively the highest in knowledge management, indicating that knowledge sharing is relatively the best in brokerage institutions. The variance of "knowledge search" in knowledge management is the highest, which indicates that brokers' performance in this area needs to be improved.

Figure 3-1 and Table 4-4 show that the path coefficient of knowledge management on enterprise performance is 0.406 ( $P < 0.001$ ), indicating that knowledge management has a significant positive impact on enterprise performance. Hypothesis H4 is verified, which also supports previous literature research. At the same time, Table 4-4 shows that knowledge management is reflected by three dimensions, such as knowledge creation, assuming that H10, H11 and H12 are established.

## DISCUSSION AND CONCLUSION

The total amount of research on China's brokerage institutions is less, and most of them are written by industry experts, lack academic research, and focus on qualitative analysis. The quantitative analysis method of this paper complements the research methods of brokerage institutions and provides a comparative and reference basis for further quantitative analysis of brokerage institutions in the industry.

This paper focuses on the hot spot "enterprise performance" that brokers pay attention to. Scholars and industry experts mainly put forward three models for enterprise performance: the main effect model, the buffer effect model, and the regulation effect model, and there is no standard answer. The quantitative analysis process and results of this paper supplement the main effect model. In addition, in terms of corporate performance, China has always emphasised results; while ignoring the process of corporate performance improvement, it is easy to ignore the sustainable development of enterprises. The "capability action performance model" verified in this paper provides a practical direction for guiding the process of improving enterprise performance and realizing the sustainable development of brokerage institutions.

For a long time, brokerage agencies have been supporting China's real estate industry, and the leading role has always been developers. With the development of the real estate, investment institutions, brokerage institutions, real estate operators and so on will experience leapfrog development. China's stock housing market will also rely more on the large-scale service efficiency of brokers and real estate operators.

Based on the research of Chinese brokerage institutions, this dissertation only studies the relevant variables of enterprise performance. The research on the management of brokerage institutions will be in the ascendant. As China's land belongs to the public ownership, and the brokerage agency is a bilateral agency rather than a unilateral agency, more Chinese research is needed to supplement the relevant theories to guide practice and summarize practice more scientifically.

Both "capability theory" and "dynamic capability theory" emphasize the importance of enterprise capability. It is found that dynamic capabilities can change the basic resources of enterprises and then change the core capabilities, thus playing a role in strategic renewal (Lenka et al., 2017). The contribution of this study is to bring dynamic capabilities into the analysis framework and find that employee service capabilities can positively affect the performance of brokerage firms through verification and verify the reflective indicators of employee service capabilities of brokerage firms. This provides a feasible way for enterprises to improve their performance. However, as China's real estate intermediary is a "bilateral agent", it can not solve the "principal-agent" interest game optimally. Solving the bilateral agent game by the reflection index of employee service ability needs to be further explored in future research.

## REFERENCES

- Adaileh, M. J., Alrawashdeh, M., Elrehail, H., & Aladayleh, K. J.. (2020). Assessing the nexus between knowledge management and firm performance: A data article. *Data in Brief*, (1), 32.
- Agarwal, S., He, J., Sing, T. F., & Song, C. C.. (2019). Do real estate agents have information advantages in housing markets? *Journal of Financial Economics*, 134(12), 715-735.



- Aguinis, H., Burgi-Tian, J. (2020). Measuring performance during crises and beyond: The Performance Promoter Score. *Business Horizons*, 64(01):149-160. <https://doi.org/10.1016/j.bushor.2020.09.001>
- Ahmed, W., Najmi, A., & Ikram, M.. (2020). Steering firm performance through innovative capabilities: A contingency approach to innovation management. *Technology in Society*, (1), 63.
- Barros, H. M.. (2021). Neither at the cutting edge nor in a patent-friendly environment: Appropriating the returns from innovation in a less developed economy. *Research Policy*, 50(1), 99-103.
- Bassi, L.. (2006). Harnessing the Power of Intellectual Capital. *The Journal of Applied Manufacturing Systems*, (6), 29-35.
- Behnam, S., Cagliano, R., & Grijalvo, M.. (2018). How should firms reconcile their open innovation capabilities for incorporating external actors in innovations aimed at sustainable development? *Journal of Cleaner Production*, 170(1), 950-965.
- Chen, C. H.. (2018). *Change and innovation*. South China University of Technology Press.
- Chen, H. W., Zhang, Q., & Feng, X. K..(2017). Research on the driving factors of enterprise innovation and its effect on innovation performance. *Jiangxi Social Sciences*, 37(11), 220-230.
- Chen, J., & Wang, H. X.. (2011). *Innovative thinkers: 12 masters of innovative theory*. Science Press.
- Chen, J., & Yin X. M.. (2019). The Emergence, Characteristics and Mission of Fourth-Generation Management Under the Paradigm Shift Perspective. *Journal of Management*, 16(1), 1-8.
- Dong, X. Y., Hu, Y. N., Shi, M., Wang, X., Yan, M. L., & Yu, Y.. (2016). Knowledge Management and Innovation: Global Perspective and the Practice of Localization. *Knowledge Management Forum*, (1), 4-16.
- Duan W. C., Li, M.. (2019). Research on organizational collaborative knowledge sharing mechanism optimization. *Journal of Chongqing University of Technology(Social Science)*, 33(6), 81-91.
- Edmondson, A.. (1999). Psychological safety and learning behaviour in work Teams. *Administrative Science Quarterly*, (44), 350-383.
- Eisenmana, M., & Paruchuri, S.. (2019). Inventor Knowledge Recombination Behaviours in a Pharmaceutical Merger: The Role of Intra-firm Networks. *Long Range Planning*, 52(2), 189-201.
- Fu J, J.. (1998). *Technology Innovation*. Tsinghua University Press.
- García-Muiña, F., & González-Sánchez, R. (2017). Absorptive routines and international patent performance. *BRQ Business Research Quarterly*, 2(20), 96-111.
- Gaston-Breton, C., Sørensen, E. B., & Thomsen, T. U.. (2020). "I want to break free!" How experiences of freedom foster consumer happiness. *Journal of Business Research*, 121(12), 22-32.
- Gen, R. L., & Shen, J.. (2017). The Building and Application of Knowledge Management Model

- of Think Tank Based on Open Innovation. *Library and Information Service*, (2), 121-128.
- Jian, Z. Q., & Liu, N. (2019). Dynamic Capability Building for Achieving Service Innovation-A Case Study of Folangsi Transformation to Service Platform. *Science and Management*, 40(12), 84-101.
- Jiang, F. Z., Zhang, J., Yang, Q., & Cheng, H.. (2020). Research on the Game of Knowledge Hidden Behaviour Based on Prospect Theory. *Science and Technology Management Research*, 2(2), 190-195.
- Jin, X., Chen, S., & Xu, J. S.. (2014). Research on the Impact of Knowledge Management Approach on Technological Innovation Process and Innovation Performance. *Forecasting*, 33(3), 15-20.
- Joshua, G.. (2019). *The Disruption Dilemma*. CITIC press Group.
- Kowalkowski, C., Gebauer, H., & Oliva, R.. (2017). Service growth in product firms: Past, present, and future. *Industrial Marketing Management*, 60(1), 82-88.
- Kremer, H., Villamor, I., & Aguinis, H.. (2020). Innovation leadership: Best-practice recommendations for promoting employee creativity, voice, and knowledge sharing. *Business Horizons*, 62(1), 65-74.
- Larsen, B.. (2020). Whatever happened to “The Technology of Foolishness”? Does it have any potential today? *Scandinavian Journal of Management*, 36(1), 34-37.
- Le, N. Q., & Supphellen, M.. (2017). Determinants of repurchase intentions of real estate agent services: Direct and indirect effects of perceived ethicality. *Journal of Retailing and Consumer Services*, 3(5), 84-90.
- Müller, P. M., Päuser, P., & Björn, M.. (2019). Fundamentals for automating due diligence processes in property transactions. *Journal of Property Investment & Finance*, 39(2), 97-124.
- Muynck, M. D., Bruneel, H., & Wittevrongel, S.. (2020). Analysis of a queue with general service demands and correlated service capacities. *Annals of Operations Research*, 29(3), 73-99.
- Nakata, C.. (2020). Design thinking for innovation: Considering distinctions, fit, and use in firms. *Business Horizons*, 63(6), 763-772.
- Newll, G.. (2020). The need for more research on the Asian real estate markets. *Journal of Property Investment & Finance*, 39(1), 3-8.
- Osmond, I. C., Adesiyun, O. S., Olusola, A. M., & Daniel, D. O.. (2015). Towards an Effective Real Estate Agency Education: A Stride to Efficiency in Nigeria. *Procedia-Social and Behavioural Sciences*, 191(6), 2687-2692.
- Paschen, J., Wilson, M., & Ferreira, J. J.. (2020). Collaborative intelligence: How human and artificial intelligence create value along the B2B sales funnel. *Business Horizons*, 63(3), 403-414.
- Peasley, M. C., Britton, B. P., Hochstein, B., Srivastava, R. V., & Stewart, G. T.. (2020). Can't leave it at home? The effects of personal stress on burnout and salesperson performance. *Journal of Business Research*, 117(9), 58-70.

- Qi, L. Y.. (2009). *Empirical Study on the Relationship between Customer Knowledge Management and Organizational Performance*. (Doctoral Dissertation, Dalian University of Technology).
- Quitas, P., & Ray, T.. (2004). *Managing Knowledge: An Essential Reader*. London: Sage Publication.
- Radnejad, A. B., & Osiyevskyy, O.. (2020). Navigating imposed innovation: A decision-making framework. *Business Horizons*, 63(1), 97-107.
- Rajapathirana, R. P. J., & Yan, H.. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, 3 (1), 44-55.
- Sun, J., & Wang, B.. (2017). The evolution of the essence of the enterprise and its research frontier. *Productivity Research*, (2), 121-126.
- Sun, Y. L., Song, J., & Chen, J.. (2018). What Factors Influence the Formation of Organizational Creativity? *Science of Science and Management of S.& T.*, 39(8), 40-52.
- Syam, N., & Sharma, A.. (2018). Waiting for a sales renaissance in the fourth industrial revolution: Machine learning and artificial intelligence in sales research and practice. *Industrial Marketing Management*, 6(9), 135-146.
- Taalbi, J.. (2020). Evolution and structure of technological systems - An innovation outputnetwork. *Research Policy*, 49(8), 65-69.
- Vedel, J. B., & Kokshagina, O.. (2021). How firms undertake organizational changes to shift to more-exploratory strategies: A process perspective. *Research Policy*, 50(1), 23-25.
- Vijanda, M. L. S., Sánchez, J. L., Fernández, P. O., & Rudd, J. M.. (2021). Service innovation management in a modern economy: Insights on the interplay between firms' innovative culture and project-level success factors. *Technological Forecasting and Social Change*, (1), 165.
- Waddingham, J. A., Zachary, M. A., & Ketchen Jr, D. J.. (2020). Insights on the go: Leveraging business podcasts to enhance organizational performance. *Business Horizons*, 63(3), 275-285.
- Wang, D.. (2009). Design of Performance Evaluation Indexes for Real Estate Development Enterprises from the Perspective of Stakeholders. *Technology and economic market*, (5), 98-99.
- Wang, H. L., Zeng, D. M., & Chen, P. Z.. (2020). A Research on Knowledge Recombination and Technology Innovation Performance: Moderate Effect of Knowledge Elements Relationship Characteristic. *Nankai Business Review*, 23(1), 53-61.
- Wang, H. L., & Han, Z. Z.. (2009). Analysis on the Path of Explicitness of Tacit Knowledge in Knowledge Management. *Science and Technology Management Research*, (1), 212-214.
- Wang, J. F., Wang, Y. Z., Feng, L. J., & Liu, P.. (2020). Research Hotspots and Visual Analysis on Evolution of Subversive Innovation. *Science and Technology Management Research*, (2), 22-32.
- Wang, J., & Wang, Y.. (2016). Employees' Education Background and Enterprise Innovation. *Journal of Xi'an Jiaotong University(Social Sciences)*, (6), 40-46.

- Wang, K., Li, C. C., Tian, G. C., & Wang, H, T.. (2019). Business Continuity Management: A Review of Its Practical Development and Theoretical Studies. *Forum on Science and Technology in China*, (6), 154-163.
- Wang, L., & Chi, G. H.. (2015). The Evolution and Application of the Design Framework of Performance Evaluation System. *Finance and Accounting*, (8), 15-18.
- Wang, Q., & Zhang, H.. (2018). Technological Innovation of Industrial Enterprises in the Past 40 Years of China's Reform and Opening-up:The Co-evolution of Institutional Environment and Enterprise innovation. *Economic Management Journal(EMJ)*, 40(11), 5-20.
- Wang, S. L., & Zhu, Z. M.. (2019). Research Progress on Intelligent Content Oriented to Digital Knowledge Management. *Journal of Intelligence*, (2), 91-98.
- Wang, S., & Shen, J.. (2019). Research on Influencing Factors and Pathway of Innovation of Start-up Enterprises Based on Grounded Theory. *Science and Technology Management Research*, (22), 182-190.
- Wang, X. J., & Wan, Y. H.. (2015). Action mechanism of customer knowledge management process on service product development performance: Case study based on collaboration competency perspective. *Studies in Science of Science*, 33(2), 264-271.
- Wang, X. Y., & Ma, W. R.. (2018). Analysis of knowledge management influence on manufacturing enterprise performance. *Studies in Science of Science*, 36(12), 2223-2232.
- Wang, Y. M., & Wang, J.. (2005). Consideration on Promoting the Corporations' Capability of Independent Innovation. *China Soft Science*, (7), 15-19.
- Wang, Y.P.. (2019). Research on the influence of employee's educational background composition on the performance of high-tech enterprises: Based on the learning effect. *Taxpaying*, (8), 234-235.
- Weaven, S., Quach, S., Thaichon, P., Frazer, L., Billot, K., & Grace, D.. (2021). Surviving an economic downturn: Dynamic capabilities of SMEs. *Journal of Business Research*, 12(8), 109-123.
- Webber, S. S., Detjen, J., MacLean, T. L., & Thomas, D.. (2020). Team challenges: Is artificial intelligence the solution? *Business Horizons*, 62(6), 741-750.
- Wei, D. X., Chen, S. P., Liu, Y., & Su, X. J.. (2021). Analysis of Market Size and Service Capacity of Tertiary Hospitals in Henan. *Medicine and Society*, 34(1), 114-118.
- Wei, H. Y., & Liu, H. Y.. (2015). The Developing Path of Employee's Interactive Response Capability in Modern Service Industry. *Journal of Marketing Science*, (1), 121-132.
- Wei, T.. (2018). *Professional responsibility and leadership*. Fudan University press.
- Weiss, E. N., & Goldberg, R.. (2020). Robust services: People or processes? *Business Horizons*, 62(4), 521-527.
- Weng, C. X., & Fang, Y.. (2020). Evaluation of Entrepreneurial Service Ability of Maker Space Based on Sharing Economy Theory. *FOREIGN ECONOMIC RELATIONS & TRADE*, (12), 113-116.
- Wilden, R., Gudergan, S., Akaka, M. A., Averdung, A., & Teichert, T.. (2018). The role of

- cocreation and dynamic capabilities in service provision and performance: A configurational study. *Industrial Marketing Management*, 78(4), 43-57.
- Wouda, H. P., & Opendenakker, R.. (2019). Block chain technology in commercial real estate transactions. *Journal of Property Investment & Finance*, 37(6), 570-579.
- Wu, C. P., & Tang, D.. (2016). Intellectual Property Rights Enforcement, Corporate Innovation and Operating Performance: Evidence from China's Listed Companies. *Economic Research Journal*, 51(11), 125-139.
- Wu, C. H., Zhang, Y. Y., & Zhang, Y. M.. (2015). An empirical research on the relationship between knowledge creation, technology innovation and organizational control during different enterprise development stages. *Scientific research management*, (12),29-38.
- Xu, W. X., Jiang, W. S., & Liu, C. J.. (2016). Collaborative Innovation Network, Knowledge Management Capacity and Enterprise Innovation Performance: An Analysis from Innovation Clusters. *Journal of Zhejiang University of Technology (Social Science Edition)*, (3), 11-17.
- Yang, G., Zhong, H. Q., & Zheng, Y.. (2020). A Review of the Learning Organization Theory. *Shangxi Youth*, (16), 98-99.
- Yang, J., Liu, R. X., & Hu, D.. (2013). Research on Impact of Inter-organizational Knowledge Sharing on Technology Innovation Capability-Based on the View of Absorptive Capability. *Science and Technology Management Research*, 33(2), 1-5.
- Yang, J. X., & He, J. S.. (2013). Study on relation between knowledge management internal driving force and knowledge management dynamic capability. *Studies in Science of Science*, 31(2), 258-265.
- Zhang, H. J.. (2017). *Research on the Impact Mechanism of Cross-Border Search and Knowledge Integration Capability on Service Innovation of Manufacturing Enterprises*. (Doctoral Dissertation, Nankai University).
- Zhang, H., Chen, J. W., & Li, L. J.. (2016). Research on the Industrial Status of China's Real Estate Industry. *Statistics & Decision*, (22), 118-121.
- Zhang, H, Chen, J. W., & Li, W. N.. (2017). Challenge of disintermediation to the information service of brokers in the second-hand house market. *Journal of Tsinghua University(Science and Technology)*, 57(4), 415-420.