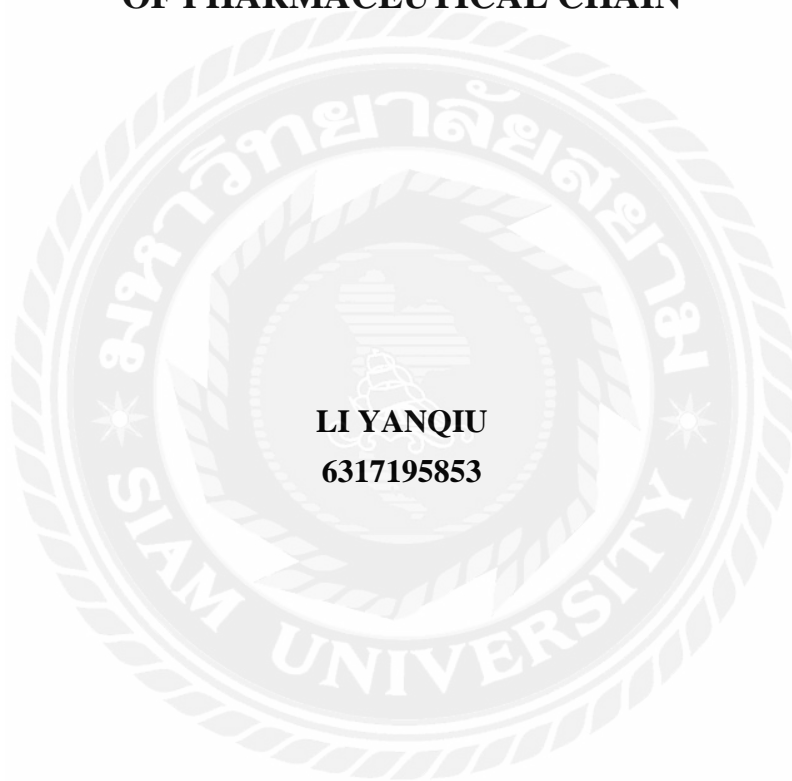# RESEARCH ON THE PERFORMANCE EVALUATION SYSTEM OF PHARMACEUTICAL CHAIN

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AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE MASTER'S DEGREE OF BUSINESS ADMINISTRATION GRADUATE SCHOOL OF BUSINESS SIAM UNIVERSITY

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RESEARCH ON THE PERFORMANCE EVALUATION SYSTEM OF PHARMACEUTICAL CHAIN

Thematic Certificate

To

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This Independent Study has been Approved as a Partial Fulfillment of the Requirement of International Master of Business Administration in International Business Management

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ABSTRACT

With the development and deepening of China's medical reform, China's pharmaceutical retail industry has developed rapidly, especially the drug retail chain. Drug retail chain enterprises emerged in China's southeastern coastal region, and in a decade of development, they have experienced the development process of western countries. Regionally, they have experienced rapid expansion from the southeast to the east, south, southwest, north, northeast and northwest of China. In terms of development stages, it has experienced a period of initial development, a period of rapid development, a period of cross-regional chain development, a period of increasing concentration, and a period of national drug retail chain development. Drug retail enterprises adopt the chain operation method, inheriting all the advantages of chain operation. They can change the inefficient logistics operations of the traditional operation mode, and adopt unified logistics to improve the efficiency and economic benefits of drug retail enterprises. Enterprises can form a complete scientific system in all aspects of operation and management, and directly apply the successful experience in newly opened stores. As a result, drug retail chain enterprises can carry out unified management of all stores, from procurement, distribution to the drug retail chain enterprise stores for unified management, drug pricing, performance assessment, and other aspects of unified management by the headquarters. All these aspects enhanced the competitiveness of drug retail chain companies. The development of drug retail chain enterprises has accelerated gradually, showing strong vitality and development potential. Drug retail chains have become the mainstream form of pharmaceutical retail industry.

This paper researched the theories related to chain management and performance evaluation index system, then, introduced the concept of drug retail chain enterprises. The study discussed the development status and development trend of drug retail chain enterprises, represented by the United States, Japan, and China. Based on the above

research, the store performance evaluation index system model was constructed by applying three systematic performance index system design methods, goal management, balanced scorecard, and key performance indicators, centered on the business management characteristics of drug retail chain enterprises. The model adopted the goal management method to decompose the strategic goals of drug retail chain enterprises and combined the four dimensions of financial, customer, internal business process, and learning and growth in the balanced scorecard to transform the goals into indicators. The performance evaluation index system of drug retail chain stores were constructed.

Finally, based on the store performance evaluation index system of drug retail chain, a store performance evaluation system was established to analyze store performance through establishing a multi-dimensional performance index analysis model. The study conducted a comprehensive evaluation of store performance by applying hierarchical analysis and Topsis method. The performance of three stores were evaluated by using hierarchical analysis and Topsis method. The on-site management capability of a pharmaceutical retail chain in Jilin Province was also evaluated by combining the statistical data of the three stores.

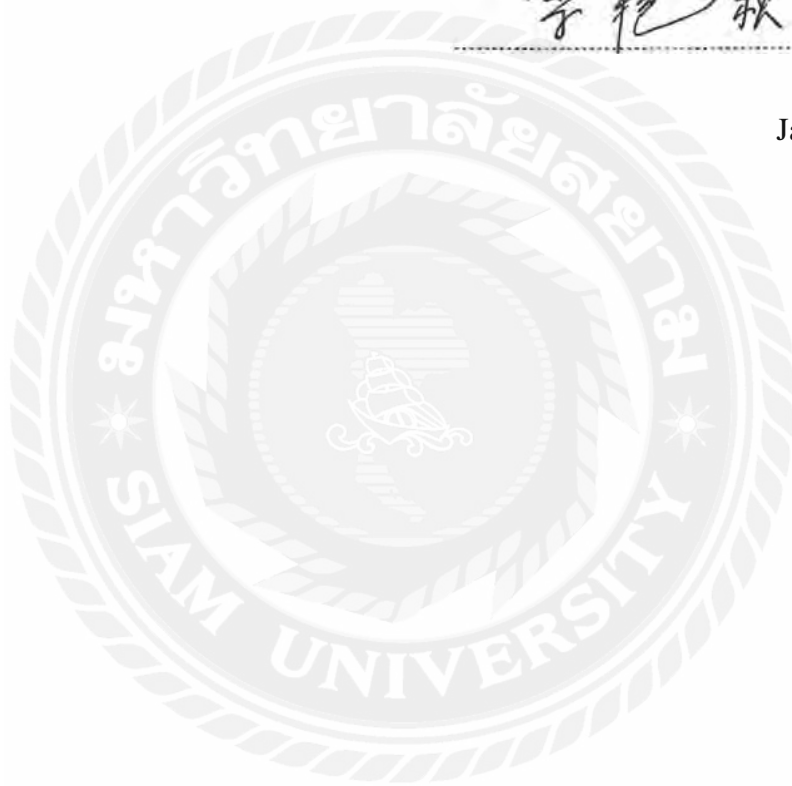**Keywords:** performance evaluation, chain management, company management, pharmaceutical chain
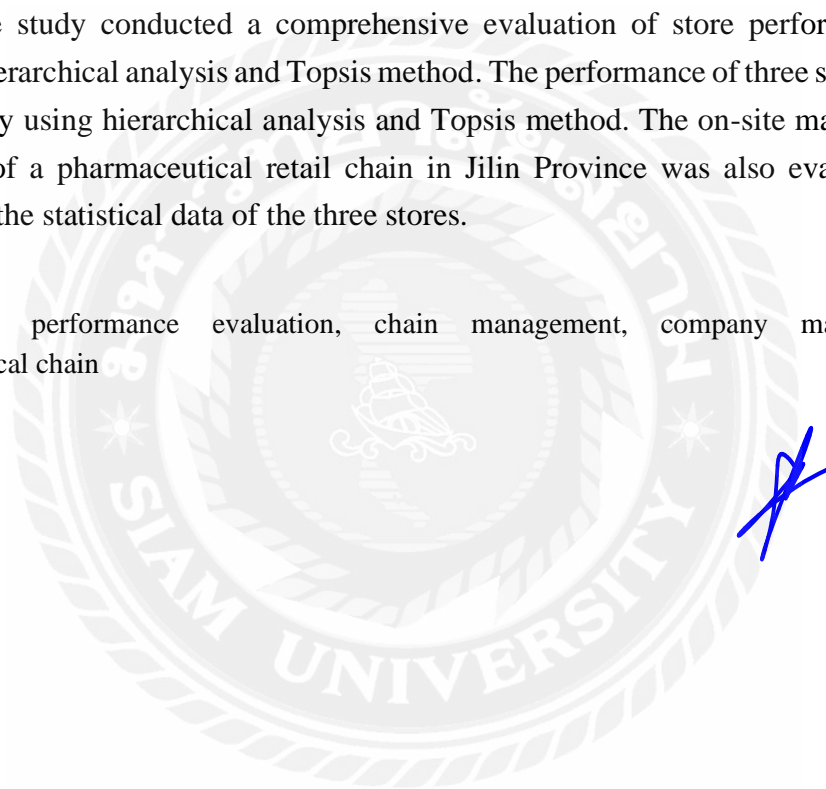
Declaration

I, Li Yanqiu, hereby certify that the work embodied in this independent study entitled "RESEARCH ON THE PERFORMANCE EVALUATION SYSTEM OF PHARMACEUTICAL CHAIN" is result of original research and has not been submitted for a higher degree to any other university or institution.

(Li Yanqiu)

Jan 12, 2022

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Chapter 1 Introduction

1.1 Introduction

In recent years, with the development of China's medical reform, China's pharmaceutical retail industry has grown rapidly. In the midst of fierce competition, the pharmaceutical retail industry must be innovative and choose a business model that is suitable for the development of the industry. The advanced business organization form of chain management has become the best choice for the pharmaceutical retail industry with its own advantages. Chain management is a modern form of organization and operation, which in essence is the application of the principles of modern mass production to the field of commercial circulation. The development of chain management can achieve the goal of improving coordination and scale efficiency, transforming business concepts and improving business mechanisms (Meng, 2004). The adoption of the chain business management model in the pharmaceutical retail industry can inject new vitality into the management of the pharmaceutical retail industry. The adoption of a chain business model in the pharmaceutical retail industry can change the inefficient logistics operation of the traditional business model and improve the efficiency and economic efficiency of pharmaceutical retail enterprises and enhance their competitiveness by adopting a unified logistics (Zhang, 2008). Drug retail chains have emerged in China's southeastern coastal region and are now spreading across the country, and their development is gradually accelerating, showing strong vitality and development potential. Drug retail chains have adopted unified management, image, procurement and distribution, marketing strategies and quality standards, which have established a good image in consumers' minds and become the mainstream of the development of the pharmaceutical retail industry. In recent years, China's retail pharmacies and retail chain pharmacies have developed rapidly, especially the number and scale of chain pharmacies have made significant development and growth, and regional chains have taken initial shape (Yang & Yang, 1998). According to the 2009 China Chain Drugstore Ranking released by China Drugstore, China Neptune Chain Drugstore had 2,709 directly operated stores and sales of RMB 280,000,000 by the end of 2008, successfully reigning as the "double champion" of China Chain Drugstore Ranking. Ltd., Guangdong Dasianlin Chain Drugstore Co., Ltd. and Chongqing Tongjunge Pharmacy Chain Co., Ltd. ranked second to fifth with sales of 255,000,000 yuan, 238,570,000 yuan, 205,000,000 yuan and 205,000,000 yuan, respectively. While the sales of drugstore chains have increased

significantly, the scale of drugstore chains, i.e. the number of drugstore chains, has also been increasing. According to the 2009 ranking of the number of directly managed stores released by China Pharmacy, Chongqing Heping Pharmacy Chain, Harbin Baofeng Pharmaceutical Chain, Yunnan Hongxiang Pharmaceutical Co. The number of drug retail chain stores has become an important indicator of the development of drug retail chain enterprises. With the increase in the number of drug retail chain stores, the control and management of stores by drug retail chain enterprises has become an important issue (Shi, 2007).

Firstly, in this paper, the theory of the chain and performance evaluation system is researched. Secondly, introducing the concept of pharmaceutical retail chain enterprises and studying on the pharmaceutical retail chain enterprise development conditions and trends, the United States, Japan and China as the representative of the pharmaceutical retail chain enterprise. On the basis of the above, designing store performance evaluation index system construction model with management by objectives, balanced score card and key performance indicators, and combined with the management features of pharmaceutical retail chain enterprises. The model has decomposition of the strategic objectives of drug retail chain with management by objectives (Zhou, 2009). Further, changing the objectives into indicators with the financial, customer, internal business processes, learning and growth dimensions of the balanced score. And making financial indicators, management indicators, customer indicators, learning and growth indicators more specific with the principles and methods of key performance indicators, in order to build a performance evaluation index system for pharmaceutical retail chain stores (Li, 2001). Finally, based on performance evaluation index system of the retail chain drug stores, building the retail chain drug stores performance evaluation index system, including two aspects: on the one hand, making performance analysis for the store with the establishment of multi-dimensional analysis model of performance indicators; On the other hand, making a comprehensive assessment on the performance of stores using AHP and Topsis method. Additionally, making assessment and order for the management capabilities of stores, with statistical data of the three stores of a pharmaceutical retail chain enterprise in Jilin Province.

1.2 Problems of the study

Pharmaceutical retail chain enterprises have developed rapidly and the market is increasingly competitive. In this competitive environment, pharmaceutical retail chain

enterprises must continuously improve their performance in order to enhance the core competitiveness and attach competitive advantage. Performance management as to enhance organizational performance, so that organizations continue to gain competitive advantage with strategic guidance to management, has become an important part of business management. Performance Management, which is a scientific management method, is into our country at 90 year of the 20th century. After 10 years of practice, the companies in China, combining industry characteristics and the actual situation of enterprises, are looking for business performance management method itself. Pharmaceutical retail chain enterprises expand the number of stores and implement cross-regional chain in pursuit of economy of scale, so that pharmaceutical retail chain management on the shop appears difficult. In order to grasp the operation of the chain stores, in a timely manner to meet market demand, a reasonable allocation of resources, drug retail chain stores have begun to implement performance management (Shi, 2007). Meanwhile, in the highly competitive pharmaceutical retail market, how to effectively mobilize the pharmaceutical retail chain stores of enthusiasm, to create value, and to improve the performance continually, which is concerned by pharmaceutical retail chain enterprises.

Pharmaceutical retail chain enterprises have been expanding and increasing the number of stores. In order to grasp the operation and management conditions of the chain store and adjust business strategy, drug retail chain stores have paid attention to their performance management. And establishing performance evaluation system of drugs retail chain stores is an important part of performance management of stores. In this paper, Based on the theory of the design and evaluation of index system, combined with the characteristics of drug retail chain, a set of scientific and systematic performance evaluation index system of drug retail chain stores is established (Chu, 2005). And based on this index system, store performance evaluation system is established, thus, evaluating store performance comprehensively.

Pharmaceutical retail chain stores performance evaluation system should not only be objective and fair assessment of store performance, but also to identify problems in the process of development of pharmaceutical retail chain enterprises in order to provide guidance for company's strategic decision-making and future development (Chen & Li, 2002). Performance evaluation system is set up to control of the store management process, control the operation of the store, and identify problems in the process of store management. Further, analyze the causes and take measures to enhance

the stores performance. On the one hand, the performance evaluation system is to reflect the actual store performance level (Wang, 2001). On the other hand, the performance evaluation system can guide the operation and management of the store. Scientific and reasonable performance evaluation system is conducive to rational management of store, so that improve store performance and efficiency.

1.3 Questions of the study

With the development of economic globalization, market competition has become increasingly fierce, and in this fierce competitive environment, an enterprise must continuously improve its overall performance level in order to improve its core competitiveness and achieve competitive advantages. The concept of "performance management" was first introduced by Aubrey Daniels in the 1970s. In the 1990s, the scientific management method of performance management was introduced to China, and after more than a decade of practice, enterprises in various industries in China began to combine the characteristics of the industry and the actual situation of the enterprise to find a performance management method suitable for the enterprise itself. method. In order to pursue the overall effect of economy of scale, drug retail chain enterprises expand the number of stores and implement cross-regional chain operations, which makes it difficult for drug retail chain enterprises to manage their stores. In order to keep track of the operating conditions of the chain stores, meet the market demand in a timely manner, and allocate resources rationally, drug retail chain companies have started to implement store performance management. At the same time, in the highly competitive pharmaceutical retail market, how to effectively mobilize the enthusiasm of drug retail chain stores, create value, and continuously improve store performance is a concern for the development of drug retail chain enterprises. Store performance is the completion of the work tasks in terms of quantity, quality and efficiency of the store within a certain period of time through the investment of material resources such as human, material, financial and time. The establishment of performance evaluation system becomes the important content and foundation of performance management. To strengthen the management of drug retail chain stores, we must strengthen the performance management of drug retail chain stores, and the performance management goes through the whole process of drug retail chain management. A systematic performance index system and a scientific performance evaluation system can not only objectively reflect the performance of stores, but also provide guidance for performance improvement.

1. Can the improvement of store performance management level of drug retail chain enterprises improve the market competitiveness of drug retail chain stores?

2. How to establish a scientific store performance evaluation system?

3. How can the performance evaluation system improve the market competitiveness of drug retail chain stores?

1.4 Objective of the study

1. To study whether the improvement of performance management level can improve the market competitiveness of drug retail chain stores.

2. To establish a scientific store performance evaluation system.

3. Go to play the ability of the performance evaluation system to improve the market competitiveness of drug retail chain stores.

1.5 Significance of the study

Drug retail chains have become the mainstream form of pharmaceutical retail industry. Due to the rapid development of drug retail chain enterprises, the scale of drug retail chain enterprises is expanding and the number of stores is increasing. In order to grasp the operating conditions of each chain store and adjust the business strategy in time, it is necessary to manage the performance of chain stores, and the establishment of the performance index system and performance evaluation system of drug retail chain enterprises have become an important element of store performance management. At present, there are few special studies on the performance management of drug retail chain enterprises, and not many studies on the performance evaluation system of drug retail chain enterprise stores, but a complete performance evaluation system for drug retail chain enterprise stores can be studied by drawing on the methods of performance management of general chain management enterprises and combining the characteristics of drug retail chain enterprise stores, so as to provide a complete performance evaluation system for drug retail chain enterprises. This will provide some guidance for the performance management of drug retail chain enterprises.

1.6 Organization of the study

The first chapter introduces the background and significance of the study, the current status of domestic and international research on performance evaluation systems, and the overall research content and methodology. Chapter 2 introduces the theories related to chain management and performance evaluation system. The theories of chain management include the concept, types, characteristics and advantages of chain management, and the theories of performance evaluation system include the connotation of performance evaluation index, the principles and methods of performance evaluation index system design and performance evaluation methods. This chapter is the theoretical basis of this paper. Chapter 3 introduces the development status of drug retail chain enterprises, firstly, it gives an overview of drug retail chain enterprises, then introduces the development status and development trend of drug retail chain enterprises in the world, mainly represented by the United States and Japan, and finally, it introduces the development status and development trend of drug retail chain enterprises in China. Chapter 4 introduces the construction of store performance index system of drug retail chain enterprises. It includes the necessity, principles and construction model of store performance evaluation index system. The model of store performance evaluation index system of drug retail chain enterprises is established by using goal management, key performance indicators and balanced scorecard. Chapter 5 focuses on the application of the store performance evaluation index system for drug retail chain enterprises and store performance evaluation. Firstly, the store performance evaluation index system is analyzed by establishing a multi-dimensional performance index analysis model, including multi index analysis, single index analysis and comprehensive analysis of achievement indexes. The store performance is comprehensively evaluated by applying hierarchical analysis and Topsis method. Chapters 4 and 5 are the core content of this paper. In the summary section, the main points of this paper are summarized.

Chapter 2 Literatures Review

2.1 Literature reviews

2.1.1 Overview of drug retail chain companies

In China, drug retail chain enterprises are still in the growth stage compared with other mature business forms, but they have already established a good image in customers' minds with their high credibility, convenience, and low drug prices (Zhong, 2008).

A drug retail chain refers to several stores dealing with the same kind of drugs, under the unified management of the headquarters, adopting a unified image, logistics, marketing strategies and quality standards, thus forming a large-scale marketing system (Tian, 2004).

Drug retail chain enterprises have all the characteristics of chain management, one is unity, drug retail chain enterprises usually adopt a unified image, unified logistics, unified marketing strategy, unified quality standards; the second is replicability, drug retail chain enterprises in all aspects of business management to form a complete set of scientific system, can be directly applied to the successful experience in the management of newly opened stores . Third, control, drug retail chain enterprises to carry out unified management of the stores, from procurement, distribution to drug pricing, performance assessment and other aspects of unified management by the headquarters, to achieve the control of the headquarters to the stores. （Modern Economic Information，2018）

According to the type of chain operation, drug retail chain enterprises can be divided into the following three types.

Regular chain, RC, refers to the pharmacies and drug counters directly operated by drug retail chain enterprises. The drug retail chain enterprise has ownership and operation rights of each store (Direct chain mode of effective use of thinking, QIU XIAOPING).

The voluntary chain, VC, refers to a chain of pharmacies that buy the brand rights of the drug retail chain, buy goods from the chain, and accept the chain's monitoring of drug quality and other aspects. This kind of franchised pharmacy has only the ownership right, while the chain enterprise has the operation right. （China Drugstore，2005）

Free chain, FC, refers to the scattered retail pharmacies in various places through the voluntary way to join the business consortium. This voluntary chain of franchised pharmacies has independent ownership and operating rights, they usually only in logistics, information, and other aspects of resource sharing. Voluntary franchise retail pharmacies are free to join and exit.The inexorable trend of the development of chain drugstores (Trend of joining in with special needs，FU XIAORONG.CHEN WEIGUO.).

Compared with single pharmacies, drug retail chains, first, have the advantage of scale, so they have a complete range of drugs, quality assurance, reasonable prices, thus forming a brand advantage; second, from the purchase and return of drugs, personnel recruitment and training, sales process guidance, etc. are carried out by professionals, and ultimately provide customers with professional services; finally, because drug retail chains implement Finally, because of the unified image, unified procurement and distribution, unified management, unified quality standards, etc., it can realize the standardization and specialization of management (Zhang, 2003). In conclusion, the advantages of drug retail chain enterprises have determined their rapid growth and become the mainstream of drug retail development.

2.1.2 Development status and development trend of China's pharmaceutical retail chain enterprises

In 1997, 28 retail pharmacies and drug retail chain enterprises were awarded the title of GSP-compliant retail enterprises by the State Drug Administration and became the first batch of retail chain pharmacies in China, after which another batch of chain pharmacies were established one after another, and 56 GSP-compliant enterprises formed the backbone of China's pharmaceutical retail chain business (Expansion of chain drugstores，CHEN WEIGUO).

The earliest drug retail chains in China appeared in the southeastern coastal region. In the mid-1990s, the first drugstore chains appeared in Guangzhou. Later, drugstore

chains such as Zhonglian Pharmacy, Consistency and Haiwang in Shenzhen developed one after another. In the early stage of development of drug retail chains, direct chains were the main mode of operation, and in 1998, Shenzhen Zhonglian Pharmacy opened its Hubei Liuduqiao store in Wuhan, becoming the first pharmacy chain to develop across regions in China (Cai, 2004). At this stage of development, pharmacy chains were still dominated by direct chains, while franchise chains emerged. In 2000, China's drug retailing industry was further liberalized, and franchised chains developed rapidly under the policy impetus. Pharmaceutical retail chains have taken the form of franchised chains to increase their stores and expand their market share (Chen, 2002). During the period of rapid development of franchised chains, the development of directly operated chains was relatively slow. As a result of the expansion of drug retail chains in the form of franchised chains, many drug retail chains have experienced management problems while their sales and market share have increased significantly. In terms of uniformity, franchised stores are obviously not as high as directly operated stores, and the large number of franchised stores also makes it more difficult for drug retail chains to control and manage their franchised stores (Chu, 2005). As a result, many drug retail chain companies have raised the threshold for franchising and turned to the direct chain business strategy. The rapid development of drug retail chain enterprises, while the competition is increasingly fierce, small, and medium-sized drug retail chain enterprises face greater competitive pressure, in order to reduce procurement costs, they formed a small and medium-sized drug retail chain enterprises procurement alliance PTO. the establishment of the PTO not only to reduce procurement costs, and its members can achieve information sharing, PTO has become the development trend of drug retail chain enterprises (Meng, 2004).

Since the reform and opening, China's drug retail chain enterprises have flourished, and in just a dozen years of development, they have undergone the development process of Western countries for decades. Regionally, they have experienced rapid expansion from the southeast to east, south, southwest, north, northeast, and northwest China (Hao, 2000). From the development stage, it has experienced the initial development period, rapid development period, cross-regional chain development period, concentration increase period and national drug retail chain development period. China has now entered the period of development of national drug retail chains, with the coexistence of affordable drugstore chains, national drugstore chains, cross-regional drugstore chains and local drugstore chains. The flowering of pharmacy chains on the one hand reflects the prosperity of development, and on the other hand also reflects the intensity

of competition (Li, 2001). According to the statistics of the Pharmaceutical Association, in 2004, one-third of the national drug retail chains were profitable, one-third were capital-protected, and one-third were loss-making, and the overall profitability showed a trend of continuous decline. In such a competitive environment, drug retail chain companies began to adjust their product structure and change their business strategies to improve their competitiveness (Zhang, 2008).

The rapid development of China's drug retail chain enterprises has also led to some problems in development. First, a part of the drug retail chain enterprises in order to expand the scale, the competition for market share, the development of many franchised stores, but a significant part of these franchised stores did not achieve the true meaning of the chain. The external, formal unity is only the surface chain, in fact, is still a single-store operation, and does not achieve a unified procurement and distribution and management operations, and does not achieve the function of the chain. Therefore, many drug retail chain enterprises in the expansion of territory and then had to take the franchise chain divestiture strategy. Second, the lack of professional practitioners. In order to achieve differentiated operations and establish their own competitive advantage must improve the level of service specialization, and whether from procurement and logistics, management or sales, drug retail chain enterprises are lack of professional talent. Moreover, there is no complete scientific training system to improve the quality of staff. Again, the management level is backward (Long, 2006). At present, the drug retail chain enterprises have not achieved the management of intelligent, not in the internal business processes to achieve integration, and rarely establish their own brand, there is no set of strategies to establish a core competitive advantage. Finally, there is no set of complete scientific marketing strategy. The current competition of drug retail chain enterprises mainly relies on price reductions to attract consumers, the lack of low-cost and differentiated strategic marketing concept.

In response to the above problems, drug retail chain enterprises should take some improvement measures. First, drug retail chain enterprises should strengthen the management of each store, so that each store from the external image, logo or internal procurement and logistics, business management to achieve uniformity, the introduction of information technology to strengthen the control of stores, to achieve the true sense of the chain. Second, establish a scientific talent introduction and training mechanism (Zhou, 2009). On the one hand, you can hire professionals from the outside, but also with universities to establish a joint training mechanism for drug retail chain

enterprises to train professionals. On the other hand, through the establishment of a reasonable incentive mechanism and training system, to attract talent and train the various types of talent needed by drug retail chain enterprises, while improving the quality of drug retail chain enterprise employees. Again, the management level should be improved (Li, 2004). The backward management level is one of the reasons affecting the development of drug retail chain enterprises. Drug retail chain enterprises need to adopt scientific management and modern management tools, optimize internal business processes, reduce management costs, improve efficiency, and can introduce and learn from advanced foreign management experience. Finally, develop an overall marketing strategy. Drug retail chain enterprises should accurately position themselves according to their own strengths and market needs, establish their own brands, and implement differentiated operations. The drug retail chain enterprises to develop a unified marketing strategy, each store specific implementation (Shi, 2009). Drug retail chain enterprises should establish a set of quality systems, from product quality, service quality to the quality of human resources must have certain standards, in addition, to provide professional advice and guidance services to customers. Only in this way can drug retail chain enterprises meet customer needs and form their own core competitive advantage.

From the current state of development of drug retail chain enterprises, we can see some trends in the development of drug retail chain enterprises. First, the drug retail chain enterprises will appear industry-wide integration. The competition of drug retail chain enterprises is very fierce, one-third of the profit, one-third of the capital preservation, one-third of the loss, industry consolidation will eliminate some lack of competitive drug retail chain enterprises (Zhang, 2003). At the same time, it is possible to establish a chain drugstore alliance, which can achieve economies of scale, reduce costs, optimize the allocation of resources such as manpower, transportation, and information, and strengthen the ability to control the market, thus improving the overall competitiveness; second, the operation of drug retail chains will be diversified. China's drug retail chain enterprises can learn from the successful experience of the United States and Japan to take the road of diversification. At present, there are already many drug retail chain enterprises, in addition to drugs, also deal with health care products, functional foods, beauty care products, health care equipment and books. Some drug retail chains have also set up in-store clinics and health centers to provide specialized services for customers. This diversified development trend of drug retail chains can meet the needs of customers (Qing, 2002). Fourth, the wide application of information

technology. Drug retail chain enterprises can use information technology to achieve intelligent management, accurate analysis, control, operation, and supervision in all aspects of procurement, distribution, and inventory management of drug retail chain enterprises. It can strengthen the control and management of each store and forecast the sales trend, etc. The application of information technology is of great importance to the long-term development of drug retail chain enterprises (Tian, 2004). Fifth, strengthen the construction of logistics. The larger the scale of chain operations, the more stores, the more important the construction of logistics centers, regional logistics and distribution centers for cross-regional chain operations more important. A unified logistics and distribution center is the key to the development and growth of the chain drugstore (Wen, 2002). Therefore, the construction of a complete logistics and distribution center is the basis for drug retail chain enterprises to achieve cross-regional network operations. In addition, with the development of the Internet, online pharmacies will become a development trend, and drug retail chains will certainly seize the online market.

2.2 Theory of Reviews

2.2.1 Performance evaluation index system

Performance in a broad sense includes both organizational performance and individual performance (Kanplan, 2005). The store performance studied in this paper belongs to the category of organizational performance. Performance can be understood as the completion of an organization's work tasks in terms of quantity, quality, and efficiency within a certain period by investing material resources such as human, material, financial and time.

Performance evaluation indicators are the evaluation factors or items of performance. In the performance evaluation process, various aspects or elements of the evaluation target are evaluated, and the concept that refers to these aspects or elements is the performance evaluation indicator.

Performance evaluation indicators are composed of four elements: first, the name of the indicator, which is a general overview of the content of the evaluation indicator; second, the definition of the indicator, which is a specific definition of the content and key variable characteristics of the evaluation indicator; third, the mark, which is a

specification of the levels of behavior and results; and fourth, the scale, which is a specification of the range of the levels specified by the mark (Kanplan, 2005).

Principles of performance evaluation index system design

Targeting principle. The design of the performance evaluation index system should be based on the actual situation of the enterprise, the purpose of the design of the performance index system, the specific factors that affect performance, and the selection of specific indicators with strong relevance (Kanplan, 2005).

Scientific principle. When designing the performance evaluation index system, first, we should choose a scientific theoretical method to make the specific indicators in the system rigorous and reasonable in terms of basic concepts and logical structure, not simply a list of indicators, but with hierarchy, systematization, and completeness. Second, the determination of indicators should be consistent with the actual situation of the enterprise (Kanplan, 2005). As the management of many enterprises is more informationzed and intelligent, the data automatically generated by the system is more objective, so the selection of specific indicators should be mainly quantitative indicators.

Clarity principle. In the process of determining specific indicators, the definition and content of each specific indicator should be clearly defined, and the calculation formula of each indicator should be listed as much as possible, so that each indicator has a clear connotation and a clear extension. In addition, the expression of indicators should be simple, intuitive, and common.

Performance evaluation index system design method

In the design of performance evaluation index system of enterprises, Management by Objectives (MBO), Key Performance Indicator (KPI) and The Blanced Score Card (BSC) are commonly used tools for performance index system design.

2.2.2 Management by Objectives

Management by Objectives (MBO) was first introduced by the American management guru Peter Drucker in his 1954 book "The Practice of Management". Objective management is a goal-oriented, human-centered, and results-based approach to transforming organizational goals and tasks into objectives, and then decomposing them from the top down into sub-objectives for each department and everyone to ensure the achievement of organizational goals (Drucker, 1954). The basic steps of goal

management are: first, the management of the enterprise formulates the management strategy and general goals, and then decomposes the goals into organizational and individual goals on the basis of internal consultation; then, the implementation status of the goals at each level is repeatedly checked to motivate the departments and individuals to carry out effective self-control and strive to achieve the goals; finally, assessment, evaluation, rewards and punishments are carried out according to the implementation status of the goals. By subdividing the goals, the organization can carry out goal management centering on the quantitative indicators of the results. Therefore, goal management is mainly applied to performance management at all levels of the organization, and is the basis for the design of the performance indicator system.

The basis and core of goal management is the determination of goals. Goals represent the result, and the overall goal needs to be supported by several sub-goals(Drucker, 1954). Therefore, the goals at each level within the organization form a network of goals. The objectives to be implemented as task assignment, performance assessment, evaluation, reward, and punishment should have the following characteristics.

Hierarchical nature of goals. Organizational goals form a top-down hierarchical system, from strategic organizational goals to departmental goals to individual goals. The highest level of the goal system is the vision and mission of the organization. The second level is the organization's mission(Drucker, 1954). The third level translates the organization's vision, mission and tasks into the organization's overall goals and strategies, which are further refined into specific action goals and action plans. At the bottom of the goal system are the sub-goals of each unit, department and individual. Organizational goals can be divided into strategic goals, strategic goals, programs, missions, etc. The different goals in the hierarchy are set by different people in the organization. In general, strategic and high-level strategic goals are set by senior managers; general strategic goals are set by middle managers; junior goals are set by junior managers; and programs and tasks are set by employees.

Goal networks. A goal network works in terms of the overall coordination of the implementation of a specific goal. Goals, action plans and results form an interconnected network. The goals are interrelated, influencing, coordinating and supporting each other, forming a large network. The development of goals is based on the coordination not only between goals, but also between goals and constraints, as well

as the coordination of time during implementation (Smith, 1997). In addition, the sub-goals at each level of the organization must be consistent with the overall goals of the organization, so that the single action of the organization's members can not only achieve individual goals, but also contribute to the realization of the departmental and organizational goals.

Diversity of goals. The specific objectives of each level of the goal hierarchy are diverse. The number of objectives at each level should not be too small or too large. Too few goals will not be able to accomplish the organization's tasks, while too many goals may overwhelm the target implementers and prevent them from accomplishing each goal, thus affecting the completion of the organization's tasks. Therefore, the number of goals should be determined by considering the organization's tasks on the one hand and the ability of goal implementers on the other. And the relative importance of each goal should be distinguished when multiple goals are set.

Assess ability of goals. The assess ability of goals is achieved through the quantification of goals. The quantification of goals makes it easier to control the organization's activities, assess performance, evaluate, and reward and punish members. When evaluating organizational performance, quantified objectives can improve the objectivity and accuracy of evaluation. Qualitative objectives should also be handled appropriately using mathematical methods as much as possible, so that they can be quantified and made more assessable.

Acceptability and challenge of goals. According to the expectation theory of American psychologist Victor Vroom, people's motivation, or incentive to take a certain action is the product of valence and expectation, where valence refers to the degree of preference for a certain work to achieve a certain expected result or the degree of satisfaction that the expected result can bring to oneself; expectation refers to the possibility that individuals can get satisfaction by taking a certain action to obtain a certain result. Expectation refers to the likelihood that an individual will be satisfied by taking an action to achieve a certain outcome (Drucker, 1954). If the goal is beyond the performer's ability, the goal will be unmotivating to the performer. Therefore, for a goal to be motivating to the performer, it must be acceptable and achievable. At the same time, the goal should be achievable by the executive with great effort, that is, it should be challenging for the executive. If the goal is set too low, it will be easy for the

implementer to achieve it and the motivation will be lost. Therefore, goals must be set in a way that is acceptable and challenging.

Feedback accompanying goals. Feedback of goals means that in the process of goal management, the formulation and implementation of goals are constantly fed back to the participants of goal formulation and implementation, so that the participants are always aware of the requirements of the organization and the extent of their contribution to the organization's goals, so that the goals can be modified and the behavior of the organization's members can be improved in time.

In summary, the formulation of the goal system usually requires a hierarchical and network-based system, with appropriate number of goals, assess ability and motivation for the goal implementers, and feedback to the organization members on the completion of goals at any time.

2.2.3 Key Performance Indicator

Key Performance Indicator (KPI) is an objective-based quantitative management indicator that measures process performance by setting, sampling, calculating, and analyzing key parameters at the input and output of processes within an organization. The core of this method is to identify the critical success factors of the organization and further decompose the critical success factors into key performance indicators. The design of KPIs follows the "two-eight principle" and the "SMART principle" (Costello, Nuttall, Powell, & Arrowsmith, 2012).

The two-eight principle is proposed by Italian economist Pareto, which means that in the process of value creation, 80% of the tasks of each department and each employee are completed by 20% of the key behaviors, and if the 20% of the key is captured, the main body is captured. The two-eight principle shows that the key performance indicators selected by the performance index system can reflect the overall performance level, which is the theoretical basis of KPI.

SMART principle, first, specific, means that the performance appraisal indicators set must be specific and detailed, not general, and can reflect the requirements of the organization for the unit, department, and employees; second, measurable, means that the performance appraisal indicators are quantitative or behavioral, and the actual

performance can be compared with the performance appraisal indicators. The actual performance can be compared with the performance appraisal indicators, and the data or information for verifying these performance appraisal indicators is available; third, action-oriented, behavior-oriented means that the performance appraisal indicators should have a binding and guiding effect on the behavior of members within the organization, so that their behavior is more in line with the requirements of the organization; fourth, realistic. Fourth, realistic, feasible means that the performance appraisal indicators can be achieved through efforts, and they should also be challenging to avoid setting too high or too low indicators and losing the motivating effect of the indicators(Costello, Nuttall, Powell, & Arrowsmith, 2012).

2.2.4 The Blanced Score Card

The Blanced Score Card (BSC), a performance evaluation system derived from Robert Kaplan and David Norton's "Future Organizational Performance Measurement", translates corporate strategy into a set of performance objectives and performance indicators through four different dimensions: financial, customer, internal business process, learning and growth. The Balanced Scorecard's financial, customer, internal business process, and learning and growth dimensions translate corporate strategy into a comprehensive set of operational objectives and performance indicators to systematically measure, control, and improve organizational performance (Maskel, 1991).

The financial, customer, internal process, and learning and growth dimensions of the balanced scorecard evaluate the performance of an organization from the perspectives of shareholders, customers, internal processes, and employees, respectively.

Financial dimension. The financial dimension focuses on "what we should demonstrate to our shareholders(Maskel, 1991). The direct purpose and result of business operation is to create value for shareholders, and profit is always the goal of the company. Financial indicators are selected to represent more of an investor's point of view and include: return on investment, profitability of expenses, asset turnover, etc.

Customer dimension. The customer dimension focuses on "what should we show to our customers"(Maskel, 1991). To create profits, we must capture customers, who

are the source of profits. Modern business strategies are oriented to customer needs. Customer indicators are selected to represent the customer's point of view, including customer satisfaction, customer loyalty, and the percentage of new customer growth.

Internal process dimension. The internal process dimension considers "what are our internal strengths to meet the needs of our customers and shareholders". Optimized internal processes and high level of management are the real core competencies of the company. The internal process dimension is selected to represent more of an internal perspective(Maskel, 1991). The internal process metrics include both process metrics and management metrics.

Learning and Growth Dimension. The learning and growth dimension focuses on "whether we can continue to improve and create value". The external environment is constantly changing, and only through continuous learning, innovation and growth can companies achieve long-term growth (Maskel, 1991). The learning and growth dimension indicators are selected to represent the views of employees. The learning and growth dimension indicators include: staff training time, staff training cost, staff promotion ratio, etc.

The financial, customer, internal process, and learning and growth dimensions of the balanced scorecard do not exist in isolation, but are interrelated and affect each other. First, the customer, internal process, and learning and growth perspectives all affect the final financial results. Improvements in the customer perspective generally affect the current financial indicators, but the effect is short-lived and low; improvements in the internal process perspective may affect both the current financial indicators and the long-term financial indicators, and the effect of different internal process indicators varies in time and strength. The improvement of learning and growth perspective indicators will not affect current financial indicators, but will affect long-term financial indicators, and the effect will be long and strong. Second, the four dimensions of finance, customers, internal processes, and learning and growth interact with each other (Maskel, 1991). The continuous learning, innovation and growth of the company solve the problem of long-term development of the company, and the continuous improvement of the quality of the employees also leads to the improvement of internal processes and management efficiency, thus better satisfying the needs of customers, expanding market share, improving financial indicators, adding value to the company, and realizing the interests of shareholders. In conclusion, the four dimensions of the

Balanced Scorecard - finance, customers, internal processes and learning and growth - are a cause-and-effect interaction and an organic whole.

2.3 Conceptual Framework

```
                    Finance: What should we show our
                    shareholders in order to be financially
                    successful?


Customers: What should we          Vision          Processes: In which businesses should
demonstrate to our customers to    Strategy        we lead in order to meet the needs of
achieve our vision?                                 our customers and shareholders?


                    Learning and Growth: What progress do
                    we need to make to adapt to change
                    and growth in order to achieve our
                    vision?
```
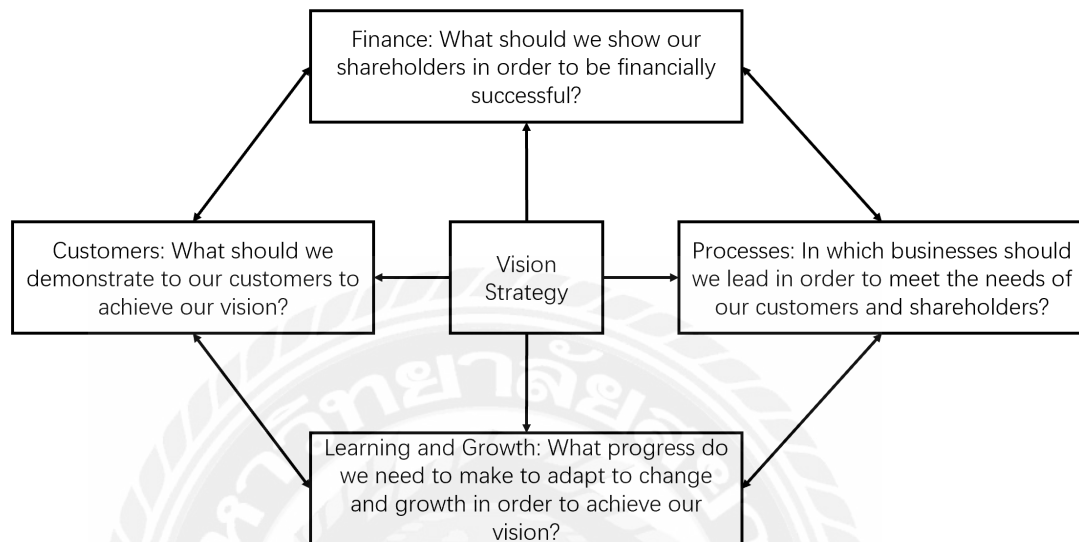
Figure 2.1 Conceptual Framework

2.4 Terms and Definition Used in This Study

The chain, a new form of circulation organization, first appeared in the United States in 1859, when George F. Gilman and George Huntington Hartford founded the Great American Tea Company in New York, the world's first chain store of considerable size. After more than a hundred years of development, the chain business form of business around the world has been rapidly developed, at present, the chain business has been department stores, supermarkets, specialty stores, warehouse membership stores and other forms of business. 1984 Pierre Cardin store in Beijing, marking the start of China's chain business. After more than a decade of development, chain management has spread to almost the entire tertiary industry in China, and is rapidly becoming the most profitable form of investment and entrepreneurship in China.

2.4.1 The concept of chain management

Chain management is a form of business organization and management system, refers to the operation of similar goods or services of a number of stores, in a certain form of a consortium, under the overall planning of specialized division of labor, and

the implementation of centralized management on the basis of division of labor, the combination of independent business activities into an overall scale of operation, so as to simplify the complex business activities and achieve economies of scale.

The essence of chain management is to unite independent and scattered stores and form a large-scale sales system with large coverage by establishing a standardized corporate image, adopting specialized operations, standardized processes, and modern management.

2.4.2 Types of Chain Business

In 2002, the General Office of the State Council forwarded to the State Council Reform Office of the State Economic and Trade Commission on the promotion of chain business development of a number of opinions of the notice pointed out that the chain is a modern circulation through a number of retail enterprises to implement centralized procurement, decentralized sales, standardized operation, so as to achieve economies of scale, mainly direct chain, franchise chain, free chain and other types. Franchise chains, free chains, and other types (Zhang, 2003).

Regular Chain refers to the chain stores directly operated by the head office, that is, the company directly operates and invests in the management of each retail outlet. The company's headquarters manages the retail outlets in terms of human, financial and material resources, as well as business, logistics and information flow (Zhong, 2008). The direct chain is essentially at the same stage of distribution, dealing with similar goods and providing the same services, using the same capital, and carrying out common business activities under the unified leadership of the same headquarters. Such an organizational form has the characteristics of unified capital, centralized management, and decentralized sales, so that the scale effect can be brought into full play. For example, Starbucks and Wal-Mart are typical direct chains.

Franchise Chain, that is, the headquarters has the technical and management experience, guidance to teach franchisees the technical experience of the operation, and receive a certain percentage of royalties and guidance fees, this contractual relationship is the franchise (Zhou, 2009). Franchise chain is authorized by the franchisor to open and operate the franchise, the franchise can use the name, trademark, proprietary technology, products, and operational management experience provided by the headquarters. The degree of unity of the franchise chain is lower than the direct chain,

the franchise has independent ownership. Typical franchised chains are: Coca-Cola, McDonald's, Kodak, etc.

Free chain, also known as Voluntary Chain, refers to several small and medium-sized retail enterprises scattered throughout the region by voluntarily joining the way to form a business consortium, this combination is usually under the leadership of the leading enterprises. The degree of unity of the free chain is lower than the franchise chain, the organization is more flexible, the voluntary franchise members have independent ownership, operation and accounting rights, the organization members can voluntarily join and exit. The purpose of a free chain organization is to enable its members to obtain the best benefits in terms of commodity procurement, sharing of information resources, and development of own-brand products through the chain. Through the development of voluntary chains, small and medium-sized enterprises can achieve economies of scale and compete with industry giants. The typical enterprises of free chains are: IGA, the largest voluntary chain in the United States, and SPAR, the largest voluntary chain in Europe.
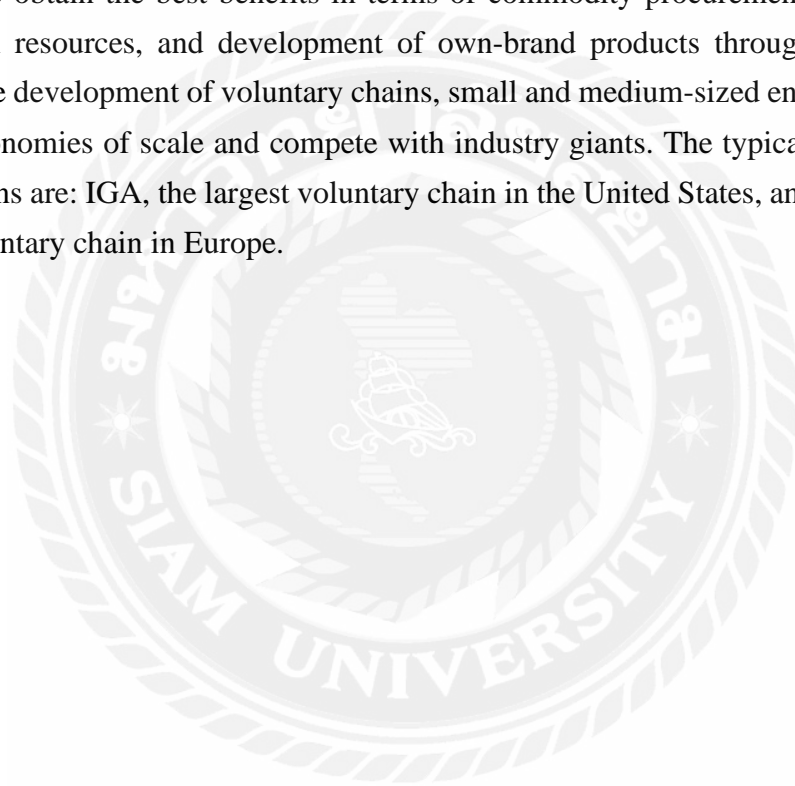
Chapter 3 Research Methodology

3.1 Introduction

The performance evaluation method based on the performance evaluation index system mainly refers to the comprehensive evaluation method of multiple indicators. Commonly used comprehensive evaluation methods of multiple indicators include hierarchical analysis, principal component analysis, Topis method and efficacy function method.

Hierarchical analysis is a method of dividing evaluation objectives into several levels and indicators, and conducting comprehensive evaluation according to different weights. Principal component analysis is a statistical method that reduces multiple indicators into a few composite indicators while maintaining a large amount of information about the original indicators, and Topis is a multi-objective decision analysis method that ranks evaluation targets by detecting their distance from the best and worst values. The efficacy function method is based on the principle of multi-objective planning, which converts the actual values of indicators of different scales into dimensionless efficacy coefficients, and then obtains the comprehensive evaluation value according to the weight relationship of each indicator, which is used as the basis for comprehensive evaluation. In this paper, the performance evaluation method is based on the combination of hierarchical analysis and Topis method.

At the same time, this paper is based on the three theories of Management by Objectives (MBO), Key Performance Indicator (KPI) and The Blanced Score Card (BSC), so it is decided to use mainly literature reading, research, and case study to conduct this paper using mixed research methods.

3.2 Research Design

First, the strategic objectives of the drug retail chain enterprise are decomposed using the goal management method, in which the business management objectives of the store can be further decomposed into four objectives: financial objectives, management objectives, market objectives and development objectives; then, the four dimensions of financial, customer, internal business process, learning and growth of the balanced scorecard are used as the framework of the entire index system, according to the actual characteristics of the drug retail chain enterprise store, the internal business process of the store is mainly management rather than production. According to the actual characteristics of drug retail chain stores, the internal business process of stores

is mainly management rather than production, so the internal business process dimension can be changed to management dimension, so that the indicator system framework of stores consists of four parts: financial indicators, management indicators, customer indicators, and learning and growth indicators, with financial status indicators, operation management indicators, customer perspective indicators, and learning and growth indicators as the four first-level indicators; finally Finally, using the principles and methods of key performance indicators, the four indicators of financial indicators, management indicators, customer indicators, and learning and growth indicators are subdivided into 11 secondary reference indicators and 46 tertiary reference indicators, which are more specific, so as to build a store performance evaluation index system for drug retail chain enterprises. Drug retail chain enterprises can modify this index system based on their actual characteristics and different development strategies, so as to be more suitable for their actual application.

3.3 Case Description

Take the secondary indicators of site management capability indicators of three stores of JL drug retail chain in Jilin Province as an example.

The decision matrix of its on-site management capability is shown in Table 3.1.

Table 3.1 JL drug retail chain enterprise in Jilin Province, three stores management capacity index values

Indicator	Ping efficiency (monthly sales/m2)	People efficiency (10,000 yuan monthly sales/person)	Customer unit price (yuan/person)	Number of customer products (number of products/person)	Product unit price (yuan / product)	Number of customers (million times)
Store 1	367.8	1.69	20.85	1.53	13.61	5.21
Store 2	560.59	1.2	40.97	2.94	13.92	3.62
Store 3	540.49	0.77	48.13	2.76	17.46	3.41

(1) Constructing the original data matrix

$$X = \begin{bmatrix} 367.8 & 1.69 & 20.85 & 1.53 & 13.61 & 5.21 \\ 560.59 & 1.2 & 40.97 & 2.94 & 13.92 & 3.62 \\ 540.49 & 0.77 & 48.13 & 2.76 & 17.46 & 3.41 \end{bmatrix}$$

(2) Normalize the original data and construct the canonical matrix

$$Y = \begin{bmatrix} 0.4271 & 0.7643 & 0.3133 & 0.3547 & 0.5204 & 0.7234 \\ 0.6509 & 0.5427 & 0.6156 & 0.6817 & 0.5323 & 0.5026 \\ 0.6276 & 0.3482 & 0.7231 & 0.6399 & 0.6677 & 0.4734 \end{bmatrix}$$

(3) Using the weights determined by the index system using hierarchical analysis above to construct the weighted normalization matrix, the weight vector w=(0.0313, 0.0133, 0.1192, 0.02, 0.0497, 0.078) for the three-level indicators under the site management capability, the weighted normalization matrix

$$Z = \begin{bmatrix} 0.0134 & 0.0102 & 0.0373 & 0.0071 & 0.0259 & 0.0564 \\ 0.0204 & 0.0072 & 0.0734 & 0.0136 & 0.0265 & 0.0392 \\ 0.0196 & 0.0046 & 0.0862 & 0.0128 & 0.0332 & 0.0369 \end{bmatrix}$$

(4) Determine the ideal solution and the anti-ideal solution.

$Z^* = (Z_1^*, Z_2^*, Z_3^*, Z_4^*, Z_5^*, Z_6^*) = (0.0204，0.0102，0.0862，0.0136，0.0332，0.0564)$

$Z = (Z_1, Z_2, Z_3, Z_4, Z_5, Z_6) = (0.0134，0.0046，0.0373，0.0071，0.0259，0.0369)$

(5) Calculate the distance scale of each objective from the ideal solution and the anti-ideal solution, respectively.

Distance scale from the ideal solution $\quad$ d1 * =0.0504

$\qquad$ d2 * =0.0227

$\qquad$ d3 * =0.0203

Distance scale from the inverse ideal solution $\quad$ d1 =0.0203

$\qquad$ d2 =0.0375

$\qquad$ d3 =0.0502

(6) Calculate the closeness of the ideal solution. $\quad$ $C1^0 = 0.2871$

$\qquad$ $C2^0 = 0.6229$

$\qquad$ $C3^0 = 0.7121$

(7) The ideal solutions are ranked in descending order of closeness C_0. The larger the value of the closeness C_0, the higher the ranking and the better the objective.

From the above data in terms of on-site management ability, Store 1 has the advantage in two indicators, namely, people efficiency and number of customers, Store 2 has the advantage in two indicators, namely, ping efficiency and number of customer products, and Store 3 has the advantage in two indicators, namely, customer unit price and item unit price. After the above comprehensive evaluation, the ranking of the three stores was obtained, and Store 3 has better on-site management ability, Store 1 has worse on-site management ability, and Store 2 has medium on-site management ability.

In this study, due to the limitation of statistics and space, not all indicators in the index system were evaluated comprehensively, but only the on-site management capability indicators were evaluated comprehensively, however, the other indicators in the index system can be evaluated comprehensively according to the comprehensive evaluation method proposed in this paper.

3.4 Data collection and analysis

The data in this paper was obtained from the National Bureau of Statistics website and a pharmacy in Jilin Province, and the pharmacy was assured that the data would not be used for commercial purposes, but only for academic research.

3.5 Validity and Reliability

Reliability refers to the degree of consistency of results obtained when the same method is used to measure the same object repeatedly. Reliability indicators are mostly expressed as correlation coefficients, which can be broadly classified into three categories: stability coefficient (consistency across time), equivalence coefficient (consistency across forms), and internal consistency coefficient (consistency across items). There are four main methods of reliability analysis: the retest reliability method, the replicate reliability method, the fold-half reliability method, and the alpha reliability coefficient method.

In this study, we use the Cronbach α reliability coefficient, which is the most commonly used reliability coefficient with the formula: $\alpha=(k/(k-1))*(1-(\sum Si^2)/ST^2)$

where K is the total number of question items in the scale, Si^2 is the within-question variance of the score of the ith question, and ST^2 is the variance of the total score of all question items. As can be seen from the formula, the alpha coefficient evaluates the consistency between the scores of the items in the scale and is an internal

consistency coefficient. This method applies to the reliability analysis of attitude and opinion-based questionnaires (scales).

The reliability coefficient of the total scale should preferably be above 0.8, and between 0.7 and 0.8 is acceptable; the reliability coefficient of the subscales should preferably be above 0.7, and between 0.6 and 0.7 is acceptable.

The data in this study were analyzed by SPSS software, and the α coefficient was 0.853, which indicates that the data of this questionnaire has good credibility.

Validity refers to the degree to which a measurement instrument or tool can accurately measure the thing to be measured. Validity refers to the degree to which the measured results reflect the content to be examined, the more the results match the content to be examined, the higher the validity; conversely, the lower the validity. There are three types of validity: content validity, criterion validity, and structural validity.

Validity is the degree of validity of a measurement, i.e., the degree to which a measurement instrument can measure the characteristics it is intended to measure, or simply put, the accuracy and usefulness of a test. Validity is the most important condition that a scientific measurement instrument must have. In social measurement, the validity of a questionnaire or scale as a measurement instrument is required to be high. Identifying validity requires clarifying the purpose and scope of the measurement, considering the content to be measured and analyzing its nature and characteristics, checking whether the content of the measurement is consistent with the purpose of the measurement, and then determining the extent to which the results reflect the qualities to be measured.

This study uses Construct Validity (Construct Validity). It refers to the degree of correspondence between a certain structure reflected in the measurement results and the measured value. The method used for structural validity analysis is factor analysis. The most important question of interest is: which characteristics are measured by the scale? In evaluating construct validity, the researcher attempts to explain the theoretical question of "why the scale is valid" and to consider what inferences can be drawn from this theoretical question. Construct validity includes homogeneous validity, heterogeneous validity, and semantic logical validity. Some scholars argue that the most desirable approach to validity analysis is to use factor analysis to measure the structural validity of the scale or the questionnaire. The main function of factor analysis is to extract some common factors from all the variables (questions) of the scale, which are highly correlated with a specific group of variables, and these common factors represent the basic structure of the scale. Factor analysis is used to examine whether the questionnaire can measure a certain structure that the researcher assumed when

designing the questionnaire. In the results of factor analysis, the main indicators used to evaluate the structural validity are cumulative contribution, commonality, and factor loading. The cumulative contribution rate reflects the cumulative validity of the common factor to the scale or questionnaire, the commonness reflects the validity of the original variable explained by the common factor, and the factor loading reflects the correlation between the original variable and a common factor. Finally, the factor analysis by SPSS software concluded that the validity of this questionnaire is good.

Chapter 4 Result of the Study

4.1 Store performance analysis of pharmaceutical retail chain companies

4.1.1 Store performance analysis model of pharmaceutical retail chain companies

The analysis of the three levels of store performance indicators should be carried out from different perspectives, so that a more comprehensive and accurate understanding of the store performance, identify problems and make decisions in a timely manner.

The four-dimensional analysis model of drug retail chain store performance can be used for different time periods, different regions, stores, employees, different product dimensions, and different three-level indicators. different time periods, different regions, stores, employees, different product dimensions, different three-level indicators of multi-dimensional cross or single-dimensional multi-level drill-down analysis.

4.1.2 Multi-indicator Analysis of Store Performance of Drug Retail Chain Companies

1. multi-indicator analysis

Expand X (index dimension): sales, gross profit, customer unit price, product unit price; fixed Y (assessment unit dimension). Store 1; fixed P (category dimension): total products; fixed Z (time dimension): 2019.
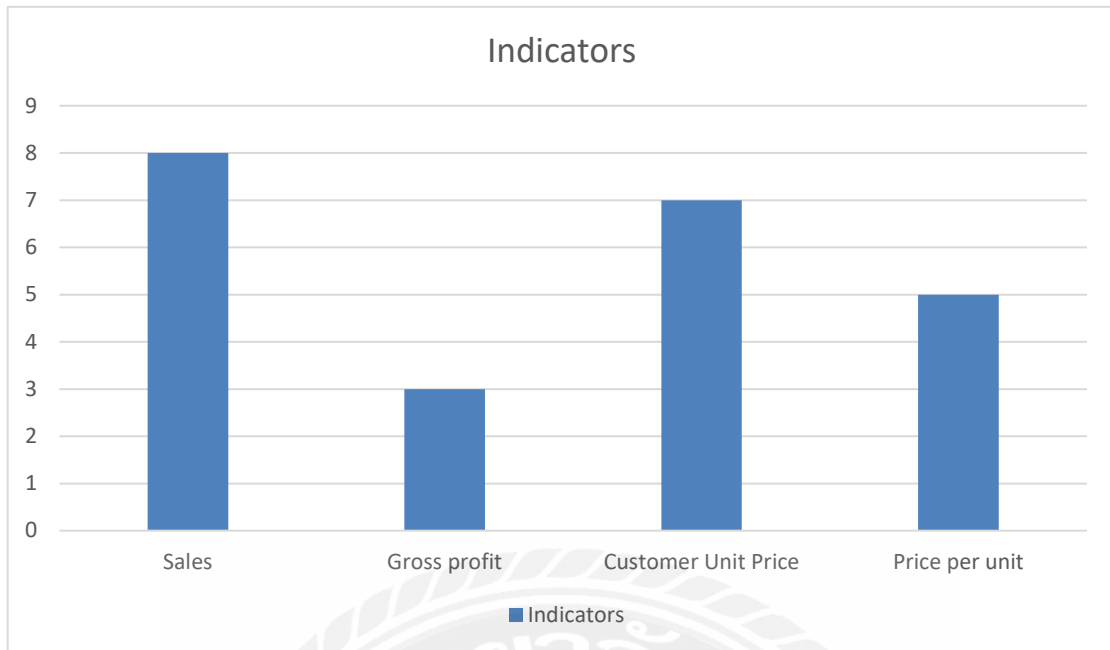
Figure 4.1 Store 1 2019 Multi-Indicator Analysis

2. multi-indicator comparison analysis

(1) Store comparison analysis. Expand X (index dimension): sales, gross profit, customer unit price, product unit price; Expand Y (assessment unit dimension): store 1, store 2; Fixed P (category dimension): total products; Fixed Z (time dimension): 2019.
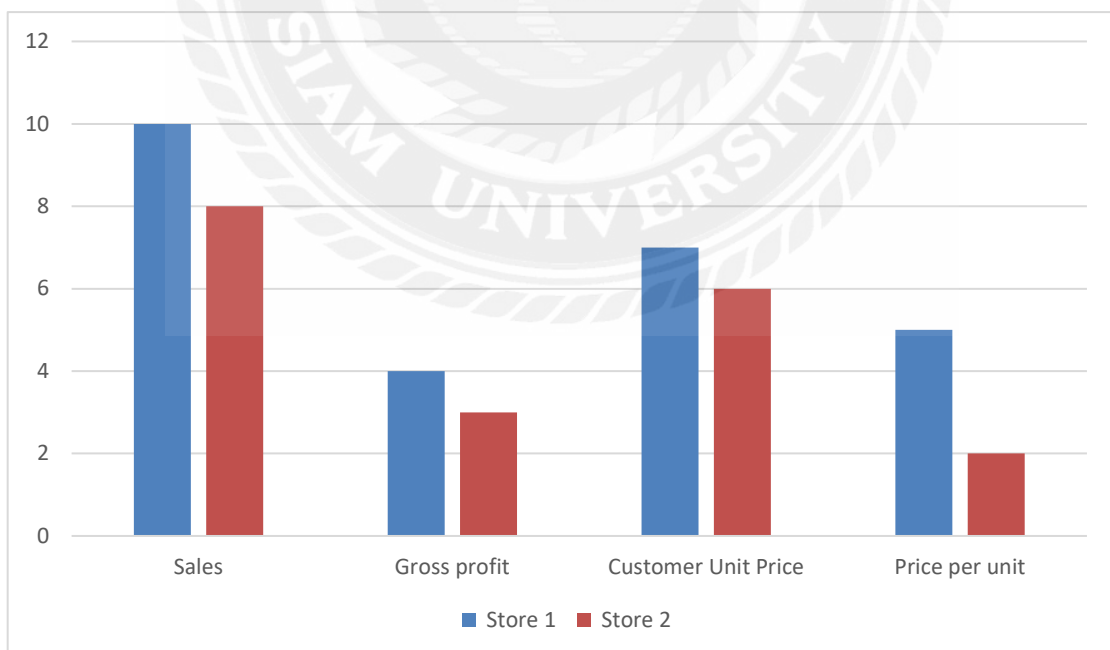

Figure 4.2 Store 1 vs. Store 2 2019 Comparative Analysis by Metrics

(2) Time comparison analysis. Expand X (index dimension): sales, gross profit, customer unit price, product unit price; Expand Z (time dimension): 2009, 2008; Fixed Y (assessment unit dimension). Store 1; Fixed P (category dimension): total products.

4.1.3 Analysis of single indicators of store performance of drug retail chain enterprises

Single-indicator multidimensional analysis of the three-level indicator sales as an example.

1. Single-indicator analysis

(1) Expand P (category dimension): cold and flu medicine, cardiovascular medicine, hypoglycemic medicine; fixed X (indicator dimension): sales; fixed Y (assessment unit dimension): store 1; fixed Z (time dimension): September 2019.
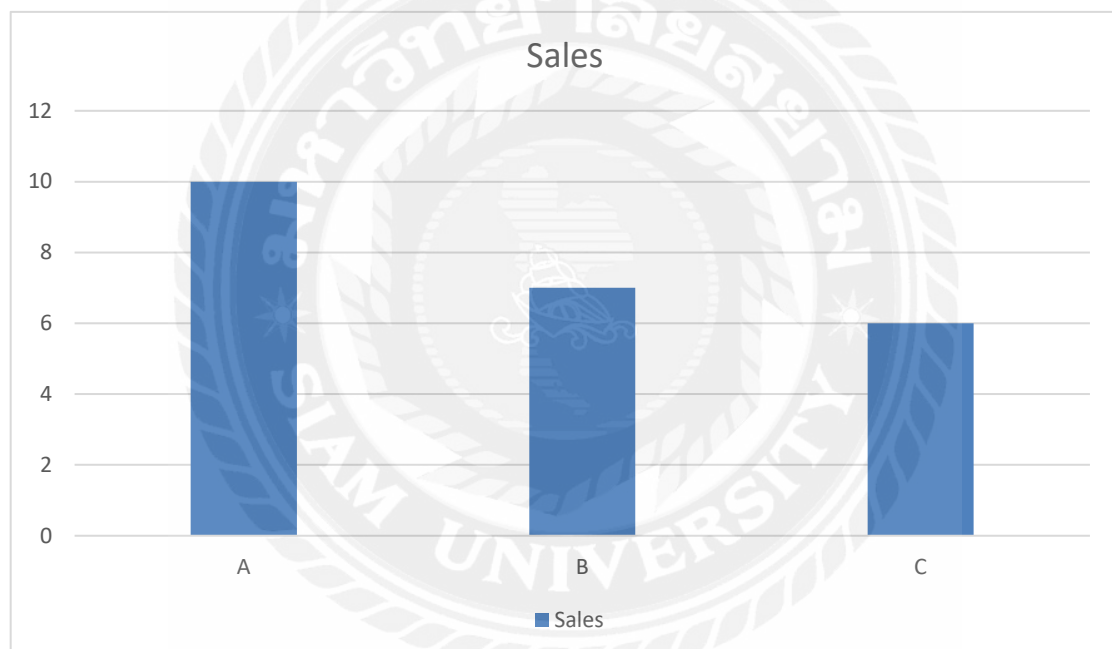

Figure 4.3 Store 1 Sales by category in September 2019

(2) Expand Y (assessment unit dimension): store 1, store 2, store 3; fixed X (indicator dimension): sales volume; fixed P (category dimension): cold medicine; fixed Z (time dimension): September 2009 (see Figure 5.6). Sales volume; fixed P (category dimension): cold medicine; fixed Z (time dimension): September 2009.
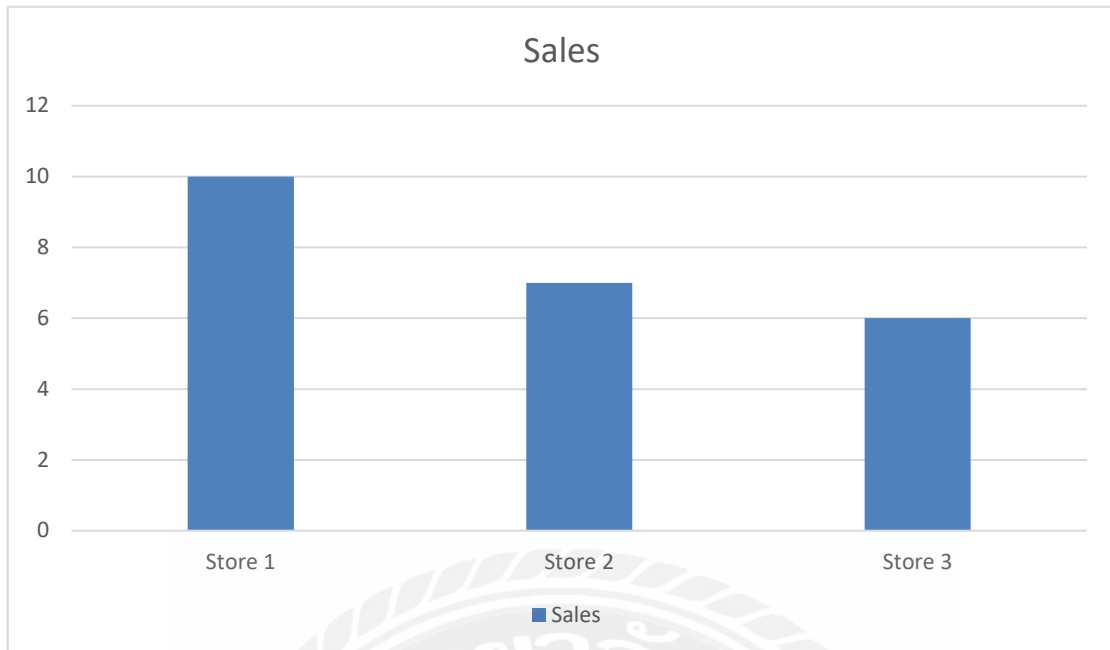
Figure 4.4 Medicine A sales by store in 2019

    (3) Expand Z (time dimension): January, February, March, April, May, June, July, August, September, October, November, December 2019; fixed X (indicator dimension): sales; fixed Y (assessment unit dimension): store 1; fixed P (category dimension): A medicine.
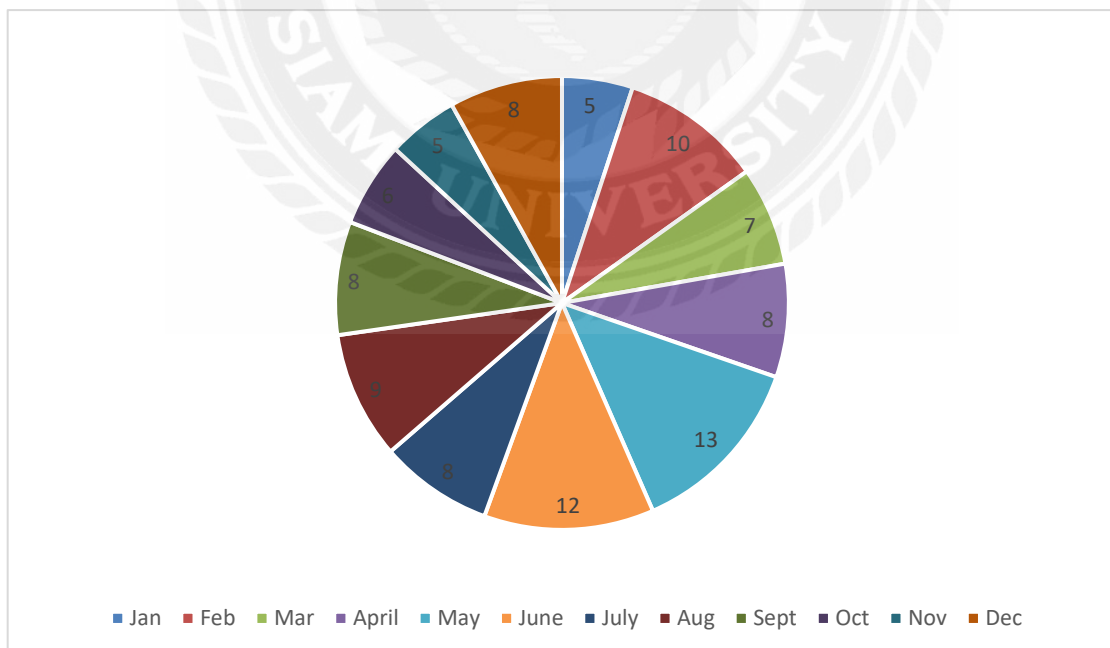

Figure 4.5 Store 1 Sales of cold and flu medicine, January-December 2009

4.2 Store performance evaluation of drug retail chain enterprises

The more important significance of the establishment of the drug retail chain store performance evaluation index system lies in the scientific application of The index system is used to make objective evaluation and guidance on the performance of drug retail chain stores. Evaluation of drug retail chain store performance evaluation is to first determine the weight coefficients of each indicator in the index system, and then use the Then, a comprehensive evaluation of the performance of drug retail chain stores is conducted by using the multi-indicator evaluation method.

4.2.1 Pharmaceutical retail chain company store performance evaluation method

The weight is specific to an indicator, and the weight coefficient of an indicator indicates the relative importance of the indicator in the overall evaluation index system. There are subjective and objective weight coefficients. Subjective weight coefficients are subjective coefficients that are determined empirically by people according to the importance of each factor of the analyzed object. Objective weighting coefficients are weighting coefficients derived from the collation, calculation and analysis of actual data. The first step in scientific weighting of the index system is to choose a scientific weighting method. The subjective weighting coefficients are determined by Delphi method, hierarchical analysis and expert rating method, and the objective weighting coefficients are determined by entropy method, standard deviation method and CRITIC method. The methods of determining subjective weight coefficients have been studied earlier and are more mature, but the objectivity is less. The objective weight coefficient determination method makes up for the shortcomings of the subjective method and has better objectivity, but because of the late development, it is still very imperfect and the calculation procedure is relatively cumbersome, which is not conducive to practical application. Multi-indicator comprehensive evaluation is a kind of evaluation method that uses mathematical methods to process the information of a complex system with multiple indicators and derive its merits and demerits. Commonly used methods include principal component analysis, artificial neural network, fuzzy comprehensive evaluation method and Topsis method.

From the actual situation of drug retail chain store performance evaluation, the Topsis method based on attribute AHP can be considered for the comprehensive evaluation of drug retail chain store performance. First, the hierarchical analysis method is used to assign weights to the store performance evaluation index system proposed in

the previous chapter, and then the Topsis method is used to comprehensively evaluate the store performance of drug retail chain companies.

Analytic Hierarchy Process (AHP) is a scientific multi-objective and multi-criteria decision-making method combining qualitative and quantitative approaches proposed by American operations researcher Thomas Sethi in the mid-1970s. Its basic principle is the principle of ranking. These interrelated factors can be arranged into a number of levels from high to low in accordance with their subordination, and then experts, scholars and authorities make judgments about the relative importance of each factor in each level. This judgment is quantified by introducing a ratio scale of 1 to 9, and then a mathematical method is used to rank and analyze the factors in each level to assist in decision making. Yoon in 1981. It is a multi-objective decision making model proposed by C.L.Hwang and K. Yoon in 1981. It is used to rank the evaluation objects by detecting the distance between them and the optimal target and the worst target, and if the object is closest to the optimal target and at the same time farthest from the worst target, it is the best; otherwise, it is the worst. The value of each index of the best target reaches the best value of each evaluation index. The value of each index of the worst target reaches the worst value of each evaluation index.

The main advantage of hierarchical analysis is the combination of qualitative and quantitative analysis, which expresses the subjective judgment of human in quantitative form and carries out scientific processing. On the one hand, hierarchical analysis has a profound theoretical foundation, but the operation procedure is simple and easy to understand and accept; on the other hand, the combination of quantitative and qualitative, subjective and objective is more applicable to the complex social science field, and can reflect the problems in the social science field more accurately. Therefore, the hierarchical analysis method has been widely used. The Topsis evaluation method based on the attribute AHP can realize the complementary advantages of the hierarchical analysis method and the Topsis method. By using the attribute AHP assignment method, the relative importance of each index is taken into account, and the knowledge and experience of experts are fully utilized, while the advantages of the Topsis method in making full use of data are also utilized. In conclusion, the Topsis method based on attribute AHP is a combination of subjective and objective, with simple principles, accurate results, and easy application.

4.2.2 Steps of store performance evaluation for drug retail chain enterprises
1. Determine the weight coefficients of performance evaluation indexes

The hierarchical analysis method has the characteristics of systematization and hierarchy. This method requires firstly, decomposing each relevant factor into different levels according to different attributes, and establishing a hierarchical model of indicators. Then, a two-by-two comparison matrix is constructed by comparing the indicators at the same level. Finally, the index weights are calculated and checked for consistency by mathematical methods.

(1) Establishing a hierarchical model. The hierarchical model is established based on in-depth analysis of actual problems. The key factors affecting the performance of drug retail chain stores are decomposed into three levels according to different attributes, and form a dominant relationship from top to bottom. The hierarchical model to be established is based on the performance evaluation index system of drug retail chain stores established in the previous chapter, with the serial numbers for each level of indicators.

(2) Construct a two-comparison judgment matrix. Based on establishing the hierarchical model, starting from the second level of the structure, each factor of the same level belonging to the previous level is compared with each other and quantified with a scale of 1--9 and described by the relative weight Aij to form a quantified two--to--two comparison judgment matrix A=(Aij)n×n. Where Aij takes values in the middle of 1--9 and its reciprocal.

4.3 Summary

From the above data, it can be seen that, in terms of on-site management ability, Store 1 has the advantage in two indicators, namely, people efficiency and number of customers, Store 2 has the advantage in two indicators, namely, ping efficiency and number of customer products, and Store 3 has the advantage in two indicators, namely, customer unit price and item unit price. After the above comprehensive evaluation, the ranking of the three stores was obtained, and it can be seen that Store 3 has better on-site management ability, Store 1 has worse on-site management ability, and Store 2 has medium on-site management ability. In this study, due to the limitation of statistics and space, not all indicators in the index system were evaluated comprehensively, but only the on-site management capability indicators were evaluated comprehensively, however, the other indicators in the index system can be evaluated comprehensively according to the comprehensive evaluation method proposed in this paper.

Chapter 5 Conclusion and Recommendation

5.1 Conclusion

With the development and expansion of drug retail chain enterprises, the improvement of store performance management level of drug retail chain enterprises has become one of the important factors for the success of drug retail chain enterprises, and drug retail chain enterprises to improve the performance management level of stores, it is necessary to establish a set of scientific store performance evaluation system, performance evaluation of stores, and store performance evaluation index system is the basis for store performance evaluation system. The store performance evaluation index system is the basis for the construction of the store performance evaluation system. The establishment of store performance evaluation index system and comprehensive evaluation of store performance can, on the one hand, enable drug retail chain enterprises to grasp the store management situation in a timely manner; on the other hand, it can guide stores to improve their performance level.

In this paper, we firstly studied the theories related to chain management and performance evaluation index system, and then discussed the development process and business management characteristics of drug retail chain enterprises. Combining these theories and the actual situation of chain management enterprises, the performance evaluation index system of drug retail chain enterprises was constructed on the basis of discussions with experts and staff of drug retail chain enterprises. The index system model is constructed by combining three systematic performance index system design methods: target management, balanced scorecard and key performance indicators. The four primary indicators of financial status, operation management, customer perspective, learning and growth, and some secondary and tertiary indicators are subdivided on this basis, which constitute a complete and systematic performance evaluation index system. On the basis of this index system, a store performance evaluation system is established, which mainly includes two aspects: first, store performance is analyzed by establishing a multi-dimensional performance index analysis model; second, store performance is comprehensively evaluated by applying hierarchical analysis and Topsis method. In this paper, we combined the statistical data of a pharmaceutical retail chain in Jilin Province to conduct a comprehensive evaluation of the on-site management capability of its three stores.

5.2 Recommendations

It is worth noting that the store performance evaluation index system should be the core strategy of the enterprise, whether horizontal or vertical are complementary to each other, mainly around the financial statements, customer needs, internal operations, and learning and training, from the bottom up to play a role in gradually supporting layer by layer. With the change of the management environment and decision-making and in a dynamic change process, we should pay attention to the combination of internal and external, emphasize customer first, emphasize internal operation, pay attention to the relationship between people, and cultivate people to learn, which is a long-term project.

The methods of the performance evaluation index system include the objective management method, the key performance indicator method and the balanced scoring method. Target management is the result, then key performance indicators and balanced scoring method is a method, only the combination of performance indicators and balanced scoring, by growth learning to support internal operations, internal operations to support customer conditions, customer conditions to support financial goals, the final support result is to get financial statements, in order to better complete target management.

Therefore, the store performance evaluation index system proposed in this paper is a dynamic indicator.

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