THE INFLUENCING FACTORS OF THE BENEFITS OF OPERATION COST MANAGEMENT IN SERVICE INDUSTRY IN SHANDONG

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ABSTRACT

The business community in the service industry is generally unaware of operation cost management and lacks a technique for managing operation costs. The rising expenses of human resources, materials and equipment, rent, and real estate are among the most significant challenges in the service industry. This paper aimed to study the influencing factors of the benefits of operation cost management in the service industry in Shandong.

The objectives of the study were: 1) To examine whether human resource costs affect the benefits of operation cost management in the service industry in Shandong; 2) To examine whether material and equipment costs affect the benefits of operation cost management in the service industry in Shandong; and 3) To examine whether rental costs affect the benefits of operation cost management in the service industry in Shandong.

This study adopted the quantitative research method. In this study, a total of 378 questionnaires were distributed, with 325 valid questionnaires, and the validity rate was 85.97%. The population consisted of service industry companies in Shandong Province, including restaurants, retail, healthcare, education, and training businesses. Based on the target cost theory, this paper found that: 1) Human resource costs have a significant positive effect on the benefits of operation cost management in the service industry in Shandong; 2) Material and equipment costs have a significant positive effect on the benefits of operation cost management in the service industry in Shandong; and 3) Rental costs have a significant positive effect on the benefits of operation cost management in the service industry in Shandong. For recommendations, operation cost management in the service industry should focus on the following aspects: 1) Optimizing human resource costs; 2) Rationalizing material and equipment costs; 3) Improving rental costs.

Keywords: influencing factors, operation cost management, service industry

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This thesis is successfully completed under the careful guidance and kind care of the supervisor. Teacher profound knowledge contain rigorous doing scholarly research attitude, seeking truth from facts of scientific research style, confident work enthusiasm, the combination of theory and practice of scientific research thought and explore the innovative spirit, will deeply affect my future work, study and life, make me lifelong benefit, in this respect teacher sincere thanks!

DECLARATION

I, Xu Zhaojun, hereby certify that the work embodied in this independent study entitled "The Influencing Factors of the Benefits of Operation Cost Management in Service Industry in Shandong" result of original research and has not been submitted for a higher degree to any other university or institution.

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Chapter 1 Introduction

1.1 Research Background

The service industry, which is one of the important components of economic development, not only plays an important role in stimulating employment, accelerating economic growth, and promoting the transformation of traditional industries but also affects the quality and efficiency of economic operations and is an important indicator of modern economic development. The products produced by the service industry are mainly service-oriented products, and the service industry is an industry facing all kinds of consumer demands. To develop in the market for a longer period, service industry enterprises need to look for the driving force that can bring about growth in enterprise value and promote the development of the enterprise (Ma et al., 2019). In the case of the capital market, which is not yet sound, the service industry enterprises are raising funds for investment in the face of such factors as information asymmetry, the financial industry's size of the enterprise, or the nature of the property rights of discrimination, the size of internal capital limitations, coupled with the characteristics of the service industry and the special product attributes, so that their investment and financing activities have been restricted. If not resolved, this will likely affect the development of service industry enterprises.

The modern service industry is gradually becoming a great driving force for economic development. At different stages of economic development, the leading industries for economic growth are different. At present, the social demand for services is increasing day by day, and the service industry is becoming the leading industry for economic growth. Focusing on the needs of industrial transformation and upgrading and residents' consumption upgrading, this will expand the effective supply of the service industry, improve service efficiency and quality, and build a new system of the service industry with high quality and efficiency, optimized structure, and strong competitiveness. The modern service industry will play a more important supporting role in building a new development pattern, driving industrial transformation and upgrading, promoting high-quality economic development, improving people's livelihoods, and transforming production and living styles. The integration of the modern service industry with scientific and technological innovation will improve the industrial level, consolidate industrial content, and boost economic development (Mehra & Inman, 2019).

Nearly 80% of the sellers in China's service enterprises are small and medium-sized enterprises. Small and medium-sized enterprise groups generally lack cost management awareness and operating margins, which are cost management methods. On the one hand, this leads to many small and medium-sized business margins not being high, and it is even thought that the profit is good, but the actual accounting found that the profit is very low, or even a loss. On the other hand, the lack of operating cost management also leads to the low competitiveness of enterprises in the service industry.

In a fierce market, competition has to win the price war, resulting in vicious competition in the industry as a whole. At the same time, under the impact of the policy, the cost of human resources, material and equipment costs, rent and real estate costs, and other costs of enterprises in the service industry are increasing day by day and have become one of the urgent problems in the service industry (Williamson, 2021).

1.2 Research Problems

In the service sector, human resource costs, material and equipment costs, and rental costs are all key operating cost management elements. First, the human resource cost aspect faces recruitment and retention challenges. Recruitment and retention of high-quality employees is a challenge in the service sector, as labor demand is usually high and competition is intense. These can lead to high employee turnover and increased frequent recruitment and training costs, which in turn negatively impact cost management effectiveness. Secondly, supply chain issues are a key challenge when it comes to material and equipment costs. The service industry faces problems of unstable material supply and price volatility, which may affect cost stability and management effectiveness (Zhao et al., 2021). In addition, equipment maintenance and renewal are also important issues. The service industry needs to keep updating equipment to meet market demand or improve efficiency, and the cost of equipment maintenance and renewal can be expensive, which may also affect the effectiveness of operating cost management. Finally, in terms of rental costs, rising rents and lease issues are challenges. Rising rents can put pressure on operating costs in the service sector, especially in busy locations or where supply is scarce. In addition, instability or unfavorable conditions of leases may affect the long-term cost management and stability of service industries (Ma et al., 2019). These issues need to be addressed through effective management and solutions to enhance the effectiveness of operating cost management. Therefore, the following questions:

(1) Do human resource costs affect the benefits of operation cost management in the service industry in Shandong?

(2) Do material and equipment costs affect the benefits of operation cost management in the service industry in Shandong?

(3) Do rental costs affect the benefits of operation cost management in the service industry in Shandong?

1.3 Research Objectives

The study of the influences of human resource costs, material and equipment costs, and rental costs on the effectiveness of operational cost management in the service

industry aims to gain an in-depth understanding of the impact of these key cost factors on the operations of the service industry and to provide effective management strategies and decision support for service industry enterprises. By analyzing these influencing factors, it can help enterprises better understand the cost structure, optimize resource allocation, improve operational efficiency, reduce costs, and ultimately enhance their competitiveness and profitability. Therefore, combined with the above analysis, the purpose of this study is:

(1) To examine whether human resource costs affect the benefits of operation cost management in the service industry in Shandong.

(2) To examine whether material and equipment costs affect the benefits of operation cost management in the service industry in Shandong.

(3) To examine whether rental costs affect the benefits of operation cost management in the service industry in Shandong.

1.4 Research Scope

The scope of the study will focus on the factors influencing the effectiveness of operating cost management in the service sector in Shandong Province in terms of human resource costs, material and equipment costs, and rental costs. The study will focus on service sector enterprises in Shandong Province, including the restaurant, retail, healthcare, education, and training industries. By analyzing in depth the characteristics and influencing factors of human resource costs, material and equipment costs, and rental costs in the service industries in Shandong Province, as well as their specific impacts on the effectiveness of operational cost management, the study will provide practical and actionable management recommendations and decision support for service enterprises in the region. The study period is from November 2023 to February 2024, with a total length of four months. The questionnaire is part of the research process. The questionnaire is divided into two parts: one part is about the basic information of the survey sample, and the second part is about human resource costs, material and equipment costs, and rental costs.

1.5 Research Significance

In the service industry of Shandong Province, human resource costs, material and equipment costs, and rental costs are important operating cost components that have a significant impact on business management and profitability. Therefore, it is important to study in depth the impact of these factors on the effectiveness of operating cost management. This study facilitates an in-depth understanding of the cost structure. Studying the contribution ratio and change trend of human resource cost, material and

equipment cost, and rental cost to operating cost can help enterprises understand their cost structure in depth and optimize resource allocation and management in a targeted way. This study is conducive to improving the efficiency of cost management. Analyzing the influencing factors of these cost factors can help enterprises identify potential problems and room for improvement in cost management, thus improving the efficiency and accuracy of cost management (Krasnikov et al., 2009).

This study is conducive to optimizing business decisions. Understanding the impact of human resource costs, material and equipment costs, and rental costs on the profitability of an enterprise can help an enterprise make more effective business decisions, including decisions on investment, pricing, and production planning. This study is conducive to enhancing the competitiveness of the service industry (Guo et al., 2020). By effectively managing human resource costs, material and equipment costs, and rental costs, firms can reduce operating costs and improve productivity and service quality, thereby enhancing their competitiveness and occupying market share. The study of the impact of human resource costs, material and equipment costs, and rental costs on the effectiveness of operating cost management in the service industry of Shandong Province can provide enterprises with specific and effective management strategies and decision-making and promote the sustainable development of enterprises.

1.6 Definition of Key Terms

Human Resource Costs refer to the costs that a company spends on hiring, training, benefiting, and managing its employees. This includes employees' salaries, social security premiums, health insurance premiums, training costs, bonuses, and benefits.

Materials and Equipment Costs refers to the costs that a firm spends on purchasing, maintaining, and upgrading the materials and equipment needed for production. This includes the cost of raw materials, production equipment, office equipment, tools, and other production supplies.

Rental Costs refer to the costs that a business spends on renting office space, production space, or other facilities. This includes rent, property management fees, insurance, and other lease-related expenses.

Benefits of Operating Cost Management refers to the following benefits that can be realized through effective management of human resource costs, material and equipment costs, and rental costs.

Reduced Costs by optimizing the use and management of resources, the operating costs of an enterprise can be reduced and profitability improved.

Improvement of Efficiency can improve productivity and employee efficiency, thus increasing the competitiveness of an organization.

Optimized Decision-Making can provide enterprises with accurate cost data and analysis to help them make more effective business decisions.

Enhancement of Enterprise Value by reducing costs, improving efficiency, and optimizing decision-making, the value and market position of the enterprise can be enhanced, and the enterprise's sustainable development ability can be strengthened.

Chapter 2 Literature Review

2.1 Introduction

2.1.1 Operation Cost Management

Operation cost is the cost of doing business and refers to the costs incurred in the daily business activities of the enterprise to provide goods or services. Operation cost management refers to the process of planning and controlling the costs incurred in the whole process of the operation activities by the cost managers so that the operation costs develop according to the direction of the expected goals (Li, 2022). Operation cost management includes operation cost planning, operation cost accounting, operation cost control, and operation performance evaluation. Operation cost planning refers to the design method of a comprehensive operation cost management strategy to make a comprehensive grasp of the operation cost management objectives and to put forward directional guidance and overall requirements for the operation cost management objectives (Le, 2022). Operation cost accounting refers to the enterprise according to the specific operation cost accounting objectives, the enterprise in the operation of the cost and expense factors to be summarized in the operation of the activities, the formation of the total cost of the enterprise objects, and unit costs (Xingwen, 2021). Operation cost control refers to preventing and controlling all the factors involving costs and expenses in the operation activities according to the pre-determined operation cost management objectives to achieve the operation cost management objectives. Operational performance evaluation is to assess the effectiveness of operational cost management to improve the process of operational cost management and to make operational cost management measures effective by motivating and disciplining employees (Shao et al., 2013).

2.1.2 Service Industry

The structure of the economy and industry is showing new trends with the rapid development of the economy, and the global economy is transforming into a modern "service economy.". The modern service industry is a knowledge-intensive service industry established in a new business model, relying on the development of modern technology and the more developed stage of industrialization (Kurbanov & Kurbanova, 2015). The modern service industry is a new type of service industry, along with modern technology, the industrial division of labor process phase, and the development of two parts: one is the new service industry, generated in the process of modernization; the second is the upgrading of the traditional service industry through the modernization of new technologies, new services, and other ways. Modern service industry development essentially comes from social and economic development, division of labor

specialization, and other needs. The modern service industry is summarized as the service industry constructed with modern scientific information technology, especially information network technology as the key support, and a brand-new business system, management mechanism, and service mode as the fundamental principles (Shek et al., 2015).

The modern service industry is characterized by high technology, knowledge, productivity, and added value. High technology is the symbol of the modern service industry, and the rapid development of the modern service industry should be based on the development and utilization of high technology. The service industry's business model and management model use technology to achieve continuous transformation and change, so the modern service industry has a high content of science and technology. High knowledge is the result of the development of modern service industry requirements. The modern service industry provides knowledge production, dissemination, and use of services. Personnel engaged in the modern service industry have knowledge, academic level, management capabilities, and other aspects of high quality. The modern service industry has knowledge-intensive characteristics. High production efficiency: the modern service industry is in the process of economic development to form aggregation. This development model has a strong group competitive advantage, reduces the additional costs arising from a decentralized layout, produces a scale effect, and improves the production efficiency of the modern service industry. High value-added in the modern service industry is an important way to improve economic efficiency with low resource consumption and exponential value-added in the service matters generated, which is a sign of the level of comprehensive competitiveness (Barna, 2020).

2.1.3 Target Cost Theory

(1) Definition of Target Cost Theory

Target cost theory is an important analysis theory in enterprise cost management. Target cost theory uses the interests of demand, enterprise value, and core benefits as the basis for the development of the enterprise's target cost and the target cost throughout the formation process of enterprise products, through the close connection with the enterprise's internal value chain and supply chain, as well as the enterprise's various departments and phases, as well as the upstream and downstream of the full force and cooperation, to jointly complete the effective management of enterprise target cost (Canepa et al., 2017).

"Target cost is equal to target pricing minus target profit" is the core idea of the target cost method. Enterprises first conduct market research to determine the price that customers are willing to pay for the product, then use the development strategy and the current situation of the industry to set the target profit, get the target cost, and then

design to meet the target cost constraints of the production and operation processes. Enterprises should follow the following six principles when setting target costs: Principle of feasibility. The target cost should be the enterprise's subjective efforts that can be achieved, based on the enterprise's current resource conditions and production technology level, to meet the needs of domestic and international market competition. Advanced principle. The target cost should be able to reflect the enterprise's current situation by exploring its potential to further improve business management and achieve the cost level (Shek et al., 2015). Mass principle. The target cost should be able to reflect the wishes and confidence of the majority of workers in the enterprise. Scientific principle. The target cost should be widely collected and summarized, based on real and effective enterprise information and the use of modern scientific and technological means of calculation. Adaptability principle. The target cost must have considerable flexibility and can be changed with the objective conditions. Decomposition principle. The target cost should be easy to divide so that the cost indicators of the hierarchical management according to the above principles, the enterprise should be in a wide range of research enterprises in previous years' cost information and the market environment, listening to a wide range of people in all aspects of the business process, and taking into account the factors affecting the cost of the development of a feasible target cost based on the various factors (Altschul, 2018).

The target cost method is suitable for situations where the market changes quickly and the supply chain has a certain flexibility. In this case, the supply chain enterprises need to quickly launch products that meet market demand according to market changes, which requires the core competence of each enterprise in the supply chain to match market demand and have strong adaptability. Each enterprise in the supply chain is responsible for different links, and the cost consumed and value created in different links, such as design, production, and sales, are different. The main task of the target cost method is to be oriented by the value created by each enterprise in the supply chain, to allocate the target cost, to eliminate conflicts among the enterprises in the supply chain, to realize the integration of the supply chain, and to respond to market changes quickly (Shek et al., 2015).

(2) Human Resource Costs

Target cost theory emphasizes guiding enterprise management activities by setting target costs, of which human resource costs are an important management element. Effective management of human resource costs can have a positive impact on operating cost management benefits. Controlling the growth of human resource costs through rational allocation of human resources can help control the overall operating costs and improve the competitiveness of the enterprise (Fortner et al., 2005). Reasonable human resource management can improve the efficiency and productivity of employees, thus reducing the production cost per unit of product or service and improving operational efficiency. Target cost theory emphasizes the comparison between performance evaluation and target cost. Effective human resource management can improve the

performance level of employees, thus making it easier for enterprises to achieve the set target cost. Appropriate incentives can stimulate the innovation and motivation of employees, thus improving the quality of products or services, reducing quality costs, and creating more added value for the enterprise. Excellent human resource management can improve employees' job satisfaction and loyalty, reduce employee turnover, lower employment costs, and improve the stability and sustainability of the enterprise. Effective human resource cost management has an important impact on the operational cost management benefits under the target cost theory, which can help enterprises realize more efficient operations and better financial performance (Rubery et al., 2016).

(3) Material and Equipment Costs

Under the target cost theory, the impact of material and equipment costs on the effectiveness of operating cost management is very important. Material costs occupy a considerable proportion of the production process, so effective management of material costs is crucial to controlling overall production costs. By establishing an effective supply chain management system, an enterprise can achieve a balance between timeliness and cost-effectiveness in material procurement, thus reducing material procurement costs, avoiding inventory backlogs, and making more effective use of capital. Equipment cost involves the cost of acquisition, operation, and maintenance of equipment (Conde, 2004). Proper management of equipment costs can reduce production costs per unit of product by improving equipment utilization and productivity. This includes aspects such as regular maintenance and servicing of equipment to ensure its proper operation, reducing downtime and wear and tear in production, and extending the useful life of equipment. In addition, the adoption of advanced technology and equipment can improve production efficiency, thereby further reducing production costs and improving operational efficiency. Through fine management of material and equipment costs, enterprises can reduce production costs, improve production efficiency, and realize better operational cost management benefits. Effective material and equipment cost management not only helps to realize the target cost but also improves the competitiveness of enterprises and lays a solid foundation for long-term development (Nyamuryekung’e et al., 2015).

(4) Rental Costs

Under the target cost theory, rental costs also have an important impact on the efficiency of operating cost management. Rental costs are an important expense in the business operation process, which has a direct impact on the operation cost management and profitability of the enterprise. The level of rental costs directly affects the fixed cost of the enterprise (Fleckenstein & Longstaff, 2020). Under the theory of target cost, enterprises need to realize the setting and achievement of target cost through reasonable control of fixed costs. The high rental cost will increase the fixed cost burden of the enterprise, reduce the profit margin, and have an impact on the profitability of the

enterprise. Rental costs are also closely related to an enterprise's productivity and competitiveness. High rental costs may lead to the enterprise's insufficiency of resources in other aspects, such as capital and manpower, which in turn affect productivity and competitiveness. Therefore, by reasonably controlling rental costs, an enterprise can release more resources for improving productivity, optimizing product quality, and upgrading service levels, thereby enhancing its competitiveness and operational efficiency (Zeng et al., 2019). Changes in rental costs will also affect the liquidity and financial stability of enterprises. Through reasonable rent management, the enterprise can effectively avoid financial risks and ensure the liquidity and financial stability of the enterprise, which is conducive to the realization of the target cost setting and achievement. Rental costs have an important impact on operating cost management efficiency under the target cost theory. Reasonable control of rental costs is conducive to reducing fixed costs, improving production efficiency, enhancing the competitiveness of the enterprise, and ensuring the financial stability of the enterprise to realize better operating cost management benefits (Zeng et al., 2019).

2.2 Research Relevant

In studying the influencing factors of operational cost management efficiency under the target cost theory, scholars have focused on several aspects. First of all, they have studied in depth how to realize the setting and achievement of target costs through cost control and efficiency improvement (Li et al., 2020). This includes exploring the optimization of resource allocation within the enterprise, the improvement of production processes, and the refined control of cost management. Through these measures, companies can control costs more effectively and improve production efficiency, thereby reducing overall operating costs. The researchers focused on the impact of performance evaluation and incentive mechanisms on the effectiveness of operational cost management. They explored how to establish an effective performance evaluation system to stimulate employees' motivation and creativity so that they can better adapt to the setting of target costs and realize them through practical actions, thus improving the benefits of operational cost management. Supply chain management and cooperative relationships are also two of the focuses of research. Scholars have studied how to guide the cooperation and coordination of each link in the supply chain through the target cost theory, optimize supply chain management, reduce material procurement costs and production costs, and improve operational efficiency and cost management benefits (Fama & Jensen, 2022).

Technological innovation and production process optimization are considered factors to improve the efficiency of operation cost management. Researchers have explored how to reduce production costs and improve production efficiency through technological innovation and production process optimization to achieve target costs and the application of target cost theory in technological innovation and production process optimization (Oliveira & Pinto, 2005). Quality management and customer satisfaction are also recognized by researchers as factors affecting the effectiveness of

operational cost management. They investigated how to guide enterprises to strengthen quality management, improve the quality level of products or services, and enhance customer satisfaction through target cost theory to improve the competitiveness of enterprises and the benefits of operation cost management (Miles et al., 2021). These studies have guiding implications for how to better apply the target cost theory for operation cost management in enterprise practice and provide theoretical support and practical guidance for enterprises to improve operation efficiency and reduce operation costs (Halati & He, 2018).

2.3 Conceptual Framework

The model framework of factors affecting the benefits of operation cost management in the service industry in the study includes human resource costs, material and equipment costs, rental costs, benefits of operation cost management, etc., in which the independent variables are human resource costs, material and equipment costs, rental costs, and the dependent variable is benefits of operation cost management. The model framework is shown in Figure 2.2.

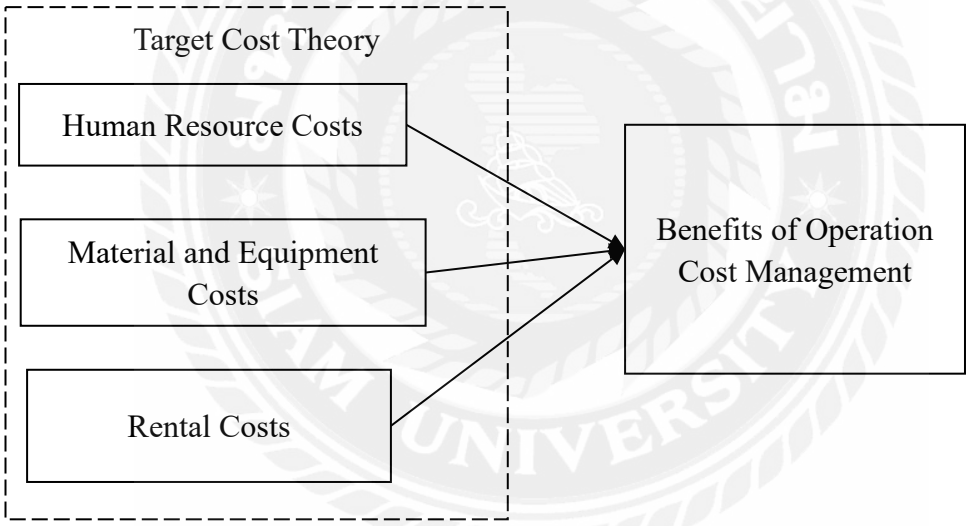

Figure 2.2 Conceptual Framework

Chapter 3 Research Methodology

3.1 Introduction

This study focuses on the influencing factors that contribute to the benefits of operation cost management in the service industry. Based on target cost theory, the independent variables in the research model were identified as human resource costs, material and equipment costs, and rental costs, and the dependent variable was the benefits of operation cost management. The questionnaire was set according to the classical scale in the research process, and the hypotheses were formulated according to the relationship between the variables. The research population and specific sample size were determined according to the purpose of the study, and the data collection was done by mail. The reliability and validity of the collected data need to be analyzed before analyzing the relationship between variables and hypothesis testing. The reliability of the data was judged by Cronbach's alpha. Validity was judged by the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO). And Bartlett's Test of Sphericity was judged. This study was to collect data. Sample data was collected using a Likert 5-point scale.

3.2 Research Design

This study adopted the quantitative research. The influencing factors of the benefits of operation cost management in the service industry are taken as the subject of the study. According to target cost theory, it is determined that the important factors affecting counselor studio construction strategies include three aspects which are human resource costs, material and equipment costs, and rental costs. The questionnaire scale design was conducted based on relevant research and theories. Design the measurement question items for each variable. A five-point Likert scale was used to measure each item.

Human resource costs have six measurement items, including effectiveness, achieving their target costs, etc. Material and equipment costs has six measurement items, including long-term operating cost savings, operational efficiency, etc. Rental costs have six measurement items, including competitiveness, financial stability, etc. Benefits of operation cost management have four measurement items, including higher profits, financial stability, etc. See Table 3.1.

Table 3.1 The Measurement Items

Measurement Item	NO.
Human Resource Costs	
1.For your company/organization, do human resource costs play an important role in operations?	Q1
2.Do you think that effective human resource management can reduce your organization's operating costs?	Q2
3.Do you think that investing in employee training and development will result in long-term operational cost savings?	Q3
4.Do you think employee benefits and incentives have a significant impact on increasing productivity and reducing HR costs?	Q4
5.Do you think optimization of human resource management can help companies better achieve their target costs?	Q5
6.Do you believe that organizations should invest more in human resources to improve operational efficiency and performance?	Q6
Material and Equipment Costs	
1.For your company/organization, do materials and equipment costs play a significant role in operations?	Q7
2.Do you think that effective materials and equipment management can reduce your organization's operating costs?	Q8
3.Do you think that investing in advanced production equipment and technology will result in long-term operating cost savings?	Q9
4.Do you think material procurement costs and inventory management have a significant impact on reducing overall operating costs?	Q10
5.Do you believe that technological innovation and production process optimization can help companies better achieve their target costs?	Q11
6.Do you think companies should invest more in materials and equipment to improve operational efficiency and performance?	Q12
Rental Costs	
1.For your company/organization, do rental costs play a significant role in operations?	Q13
2.Do you think that effective rent management can reduce the operating costs of your organization?	Q14
3.Do you think the level of rental cost affects the fixed cost burden of the organization?	Q15
4.How do you think the reasonable control of rental cost will affect the productivity and competitiveness of the enterprise?	Q16
5.Do you think reasonable rental management can improve the liquidity and financial stability of enterprises?	Q17
6.Do you think enterprises should invest more in rent to improve operational efficiency and performance?	Q18
Benefits of Operation Cost Management	

Measurement Item	NO.
1.What do you think are the obvious benefits that effective operational cost management can bring to an organization?	Q19
2.Do you think that optimization of cost management can improve the competitiveness of a company?	Q20
3.Do you think effective cost management can lead to higher profits and financial stability?	Q21
4.Do you think that companies should pay more attention to operational cost management to achieve long-term sustainable development?	Q22

Each variable was analyzed and organized according to the literature and variable operational definitions. The measurement question items for each variable will be used as indicators and content for the specific collection of variable data. Once the questionnaire has been designed, the questionnaire will be distributed according to the requirements. During the data collection process, the data will be screened according to the time response status of the questionnaire. Invalid questionnaires will be eliminated and valid questionnaires will be organized to lay the foundation for later data analysis.

3.3 Hypothesis

The independent variables in this study are human resource costs, material and equipment costs, and rental costs. The dependent variable is the benefits of operation cost management, and the model is constructed based on the analysis and the relationship between the variables. The relationship between variables is set through hypotheses. Therefore, hypotheses are formulated:

H1: Human resource costs have a significant positive effect on the benefits of operation cost management in the service industry in Shandong.

H2: Material and equipment costs have a significant positive effect on the benefits of operation cost management in the service industry in Shandong.

H3: Rental costs have a significant positive effect on the benefits of operation cost management in the service industry in Shandong.

Combined with the above analysis, the hypothetical model of the influencing factors of the benefits of operation cost management in the service industry is constructed and the interrelationships among the variables are confirmed. See figure3.1.

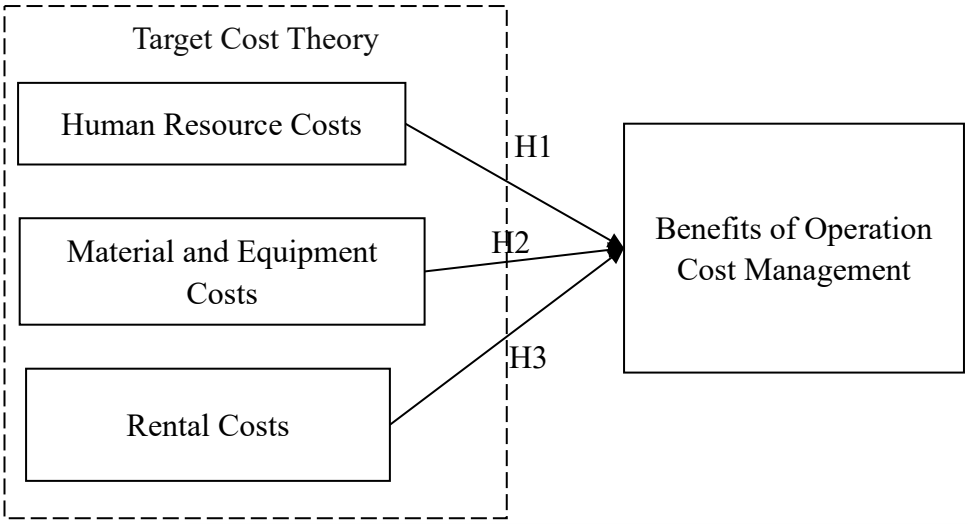

Figure 3.1 Hypotheses

3.4 Population and Sampling

The scope of this study is service industry companies in Shandong Province, including restaurants, retail, healthcare, education, and training. The study period is from November 2023 to February 2024, with a total length of four months. Other places are not included in the scope of the study. The research subjects are the employees of service industry companies. The surveyed employees need to have worked in service industry companies for at least one year, have some understanding of the benefits of operation cost management, and be able to give some comments.

The sample ensured is fully representative of the entire service industry so that more representative and reliable findings can be obtained. Therefore, this time, the random sampling method was used for sample selection, in which the sample size was calculated. The calculation gives the sample size for this sample survey as 377.89, so the number of people to be sampled is 378.

$$N = \frac{r^2 * \rho(1-\rho)}{\beta^2}$$

3.5 Data Collection

The data collection for this survey was done mainly through the personnel office of the enterprises in the service industry in Shandong, which obtained a list of the employees of the enterprises. Based on this list, the employees were numbered to ensure that everyone had an equal chance of being selected. Using a random number generator, a certain number of employees were randomly selected from the list to form the study

sample. Based on the sample drawn, the selected employees were contacted through email. The employees were informed about the purpose and importance of the study and their contribution by participating in it. Clear survey instructions and confidentiality statements were provided to each employee to ensure that the privacy of the participants was protected. Incentives were provided to increase participation, such as a commitment to participate in feedback on the results of the study. Ensure that questionnaires or interviews are designed to be concise and minimize the burden on participants. The study period was from November 2023 to February 2024. A total of 378 electronic questionnaires were distributed, and 325 valid questionnaires were returned, for a recovery rate of 85.97%.

3.6 Data Analysis

3.6.1Reliability

Based on the data collected, the data was organized and filtered. The missing data were eliminated, while the variables assigned to the research were loaded into the SPSS software for analysis. By applying Cronbach's alpha coefficient to analyze the reliability and validity of the data of this research, and then determine whether the intention and purpose of the survey can be carried out through the questions in the questionnaire to reflect the validity of this dissertation research, as well as whether the information and content are reliable. The questionnaire reliability analysis is used to test whether the questionnaire questions used in this research are stable, reliable, and not related to whether the data is correct or not. The size of Cronbach's alpha coefficient can reflect the reliability of the reliability or not. When the obtained coefficient is greater than 0.8, it indicates that the reliability of the questionnaire is better; if the obtained coefficient is in the range of 0.6-0.8, it indicates that the reliability of the questionnaire is generally acceptable; if the obtained coefficient is less than 0.6, it indicates that the reliability of the questionnaire is not able to meet the standard. Cronbach's alpha was used in the study to test the reliability of each topic in the questionnaire.

The Cronbach's alpha coefficient of human resource costs is 0.899, the Cronbach's alpha coefficient of material and equipment costs is 0.902, the Cronbach's alpha coefficient of rental costs is 0.889, and the Cronbach's alpha coefficient of benefits of operation cost management is 0.840. All of them are in the range of 0.8~0.9, which indicates that the reliability of this paper's questionnaire is better, and then the validity can be further analyzed. This indicates that the reliability of the questionnaire of this survey study is very good, as shown in Table 3.2.

Table 3.2 Variate Reliability Test

Variate	Cronbach's Alpha	N of Items
Human Resource Costs	0.899	6
Material and Equipment Costs	0.902	6
Rental Costs	0.889	6
Benefits of Operation Cost Management	0.840	4

3.6.2 Validity

The reliability analysis is an investigation performed to determine the stability of a scale. The validity study is necessary to ensure that the scale accurately reflects the factor being measured. Methods used in validity analysis include questioning factor analysis and validated factor analysis. The reliability was performed with SPSS software. The reliability study is performed to determine the durability that the scale. In general, two indicators are employed to assess the questionnaire's validity: KMO and Barlrtt's spherical test. KMO ranges from 0 to 1. The higher the KMO value, the better the relationship between the parameters, making the original variables more suitable for factor analysis, and the other way around. The KMO criterion requires a value above 0.7 for factor analysis to work.

The question's validity was assessed, and the findings of the data quantity analysis indicated that the questionnaire had good validity. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is used to assess validity; the KMO value is 0.926, which is greater than 0.7, and the Sig. of Bartlett's Test of Sphericity is less than 0.000, indicating significance.

Table 3.3 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.926
Bartlett's Test of Sphericity	Approx. Chi-Square	3351.966
	df	153
	Sig.	0.000

The data gathered was analyzed using the Maximum Variance Method, revealing the extraction of three common factors, consistent with the three variables in the questionnaire. The results of the calculation indicate that the dependent variable is explained by the five main factors at a rate of 66.737%, meeting the requirement of being over 50%. This information can be found in Table 3.4. Furthermore, the calculation results from the Rotated Component Matrix demonstrate good question-item differentiation validity for each factor, as shown in Table 3.5.

Table 3.4 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	% of Variance	Cumulative %
1	7.058	39.210	39.210	7.058	39.210
2	3.060	17.002	56.212	3.060	56.212
3	1.895	10.525	66.737	1.895	66.737
4	0.584	3.243	69.980		
5	0.525	2.918	72.898		
6	0.500	2.777	75.676		
7	0.465	2.585	78.261		
8	0.455	2.527	80.787		
9	0.438	2.431	83.219		
10	0.423	2.351	85.569		
11	0.400	2.224	87.793		
12	0.390	2.169	89.962		
13	0.376	2.087	92.049		
14	0.360	1.999	94.049		
15	0.326	1.812	95.861		
16	0.270	1.498	97.359		
17	0.252	1.400	98.759		
18	0.223	1.241	100.000		

The factor analysis results must be realistic and have significance for each factor. Rotating the factor weighting matrix emphasizes the connections between the variables that were initially included and the factors, as each of the variables has a greater impact on exactly one factor that is common and a lower weighting on the other common variables. Additionally, the factors were rotated to better categorize each of the variables that were originally set the maximum variance approach was used to rotate the formation matrix to ensure the fact that there is no autocorrelation in the subject matter obtained from each variable, and the maximum eigenvalue was determined. Through the results of Table 3.5, it can be learned that a total of five factors were extracted, and each variable has a large loading on only one common factor, while the loadings on the other common factors are small, indicating that each variable has a better but differentiated validity.

Table 3.5 Rotated Component Matrix

	1	2	3
Q1		0.848	
Q2		0.809	
Q3		0.771	
Q4		0.795	
Q5		0.782	
Q6		0.767	
Q7	0.873		
Q8	0.783		
Q9	0.763		
Q10	0.789		
Q11	0.789		
Q12	0.789		
Q13			0.726
Q14			0.762
Q15			0.742
Q16			0.768
Q17			0.779
Q18			0.784

Chapter 4 Findings

4.1 Introduction

In the present investigation, data were gathered by creating an online survey, and 325 reliable responses were obtained. The data were evaluated for both validity and reliability. The acquired data was deemed to be reliable and valid, and it could be examined using correlation and descriptive statistical analysis. The relevant data in this study were subjected to descriptive statistical examination and correlational evaluation. The analysis was conducted in order to clarify the connections between each of the variables. The hypotheses are investigated using correlation analysis.

4.2 Description of Statistical Variables

Table 4.1 Distribution of Basic Characteristics of Samples (N = 325)

Item	Options	Frequency	Percent%
Gender	Male	164	50.5
	Female	161	49.5
Age	Under 30	101	31.1
	30-50	110	33.8
	Over50	114	35.1
Education	High school and below	87	26.8
	Bachelor's degree	82	25.2
	Master degree	69	21.2
	Higher than the Master's degree	87	26.8
Position	Operation	98	30.2
	Lecturer/instructor	103	31.7
	Other	124	38.2
Tenure	Less than 1 year	72	22.2
	1-2 years	50	15.4
	3-5 years	82	25.2
	6-7 years	61	18.8
	More than 7 years	60	18.5
Total		325	100.0

In the survey, a total of 325 valid questionnaires were collected from the faculty and staff of the service industry. By organizing and analyzing the data of the study, for the gender aspect of the survey, it was obtained that the sample of the study was 164 males, accounting for 50.5%, and 161 females, accounting for 49.5%. In the survey on age, a relatively even distribution of age can be observed. In the survey on education, the distribution of the educational level of the sample is relatively even. In the survey

on jobs and work experience, the distribution of samples is basically in line with the actual situation. As shown in Table 4.1, The sample as a whole met the statistical requirements. The descriptive statistics on the entire sample might provide a more comprehensible measurement of the subject population as a whole. The standard deviation method and the deviation from the mean are often two noteworthy indicators of a descriptive statistic for an entire sample. The deviation from the mean represents the relative variation of the data within the entire sample, whereas the mean represents the sample's concentration on a specific notion or underlying condition. The tiny discrepancies between each question item imply that the assessment was done quite equally. Based on the investigation, the mean statistical value for each variable ranged from 3.38 to 3.89. This shows that the assessment of every question item is fairly consistent.

Table 4.2 Descriptive Statistics

Items	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Kurtosis Statistic
Q1	1	5	3.57	1.094	-0.497	-0.457
Q2	1	5	3.59	1.179	-0.533	-0.489
Q3	1	5	3.42	1.07	-0.417	-0.468
Q4	1	5	3.61	1.268	-0.464	-0.894
Q5	1	5	3.38	1.156	-0.457	-0.450
Q6	1	5	3.44	1.171	-0.551	-0.437
Q7	1	5	3.50	1.124	-0.358	-0.802
Q8	1	5	3.55	0.982	-0.269	-0.143
Q9	1	5	3.65	1.074	-0.271	-1.119
Q10	1	5	3.78	1.326	-0.657	-0.781
Q11	1	5	3.64	0.914	-0.078	-0.612
Q12	1	5	3.87	1.216	-0.604	-0.825
Q13	1	5	3.93	0.882	-0.561	-0.200
Q14	1	5	3.63	1.080	-0.843	0.301
Q15	1	5	3.89	1.017	-0.827	0.470
Q16	1	5	3.93	1.043	-0.636	-0.528
Q17	1	5	3.80	1.033	-0.588	-0.248
Q18	1	5	3.49	1.221	-0.433	-0.717
Q19	1	5	3.61	1.099	-0.428	-0.560
Q20	1	5	3.61	1.231	-0.678	-0.439
Q21	1	5	3.69	1.103	-0.438	-0.577
Q22	1	5	3.85	1.050	-0.668	-0.411

Skewness measures the symmetry of a data distribution. A standard distribution has a skewness of zero. If skewness > 0, the data is positively skewed, with the tail that's long on the appropriate side; if skewness < 0, it is negatively skewed, with the

long the tail on the left. Kurtosis describes how closely the data fits the mean and how sharp or flat the distribution is. A high kurtosis is greater than zero, suggesting a steeper, more prominent peak than a normal distribution, and vice versa. The analysis yielded descriptive statistics, including mean statistic, skewness statistic, and kurtosis. According to the results of the analysis, the descriptive statistics results, mean statistic meets the requirements, skewness statistic, kurtosis statistic meets the requirements, see Table 4.2. The research data meets the normal distribution and is suitable for correlation analysis.

4.3 Results of the Study

Correlation analysis is a quantitative method used to determine whether there is an interdependent relationship between the study participants. If the correlation analysis reveals that the objects of inquiry have a dependent relationship, the direction as well as the level of association among the parameters can be used as indicators. Correlation analysis is commonly used to determine the level of the relationship between variables and factors. Pearson's coefficient is widely used to determine the relationship between these elements; a value of a coefficient greater than 0 indicates that there is a positive correlation; a ratio less than 0 shows a negative association; and a numerical value closer to 1 implies a greater connection.

In research, the symbol r is widely used to represent the correlation coefficient. In Table 4.3, the Pearson correlation coefficient of $r \leqslant 0.3$ shows no linear association between both of the variables. The correlation statistic of $0.3 < r \leqslant 0.5$ shows a modest linear correlation; $0.5 < r \leqslant 0.8$ indicates considerable linear correlation, and 0.8<the more they indicate considerable linear correlation. Following the correlation analysis, the correlation coefficients between human resource expenses, supplies and equipment costs, rental costs, and advantages of operation management of costs range from 0.244 to 0.523. Both of those variables are significantly associated ($p < 0.01$), showing a positive association (refer to Table 4.3).

Table 4.3 Correlation Between Variables (Pearson Correlation Matrix)

	Human Resource Costs	Material and Equipment Costs	Rental Costs	Benefits of Operation Cost Management
Human Resource Costs	1			
Material and Equipment Costs	.248**	1		
Rental Costs	.421**	.472**	1	
Benefits of Operation Cost Management	.244**	.497**	.523**	1

NOTE：*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation coefficient between human resource costs and the benefits of operation cost management is 0.244 and P<0.01, indicating that there is a correlation between human resource costs and the benefits of operation cost management, and it is a general correlation.

The Pearson correlation coefficient between material and equipment costs and the benefits of operation cost management is 0.497 and P<0.01, indicating that there is a correlation between material and equipment costs and the benefits of operation cost management, and it is a general correlation.

The Pearson correlation coefficient between rental costs and benefits of operation cost management is 0.523 and P<0.01, indicating that there is a correlation between rental costs and benefits of operation cost management, and it is a general correlation.

Therefore, according to the results of the data analysis, human resource costs have a significant positive effect on the benefits of operation cost management in the service industry. Hypothesis H1 holds. Material and equipment costs have a significant positive effect on the benefits of operation cost management in the service industry. Hypothesis H2 holds. Rental costs have a significant positive effect on the benefits of operation cost management in the service industry. Hypothesis H3 holds.

Chapter 5 Conclusion and Recommendation

5.1 Conclusion

This study is based on target cost theory, a study on the influencing factors of the benefits of operation cost management in the service industry. The study collected data by distributing questionnaires; 378 electronic questionnaires were distributed, and 325 valid questionnaires were recovered, with a recovery rate of 85.97%. and the relationships and hypotheses between the variables were analyzed by SPSS.

5.1.1 Human Resource Costs Have a Significant Positive Effect on the Benefits of Operation Cost Management in the Service Industry in Shandong

The Pearson correlation coefficient between human resource costs and the benefits of operation cost management is 0.244 and P<0.01, indicating that there is a correlation between human resource costs and the benefits of operation cost management, and it is a general correlation. This Pearson correlation coefficient value of 0.244 indicates that there is some degree of positive correlation between human resource costs and operating cost management benefits. The p-value of less than 0.01 indicates that this correlation is significant, i.e., with a fair degree of confidence that this correlation is not due to random factors. This means that in operational cost management, as the cost of human resources increases, it is usually accompanied by an increase in the benefits of operational cost management. Therefore, this finding emphasizes the need to consider the relationship between human resource inputs and operating returns in a comprehensive manner when formulating operating cost management strategies and to further examine the specific factors that contribute to this relationship.

5.1.2 Material and Equipment Costs Have a Significant Positive Effect on the Benefits of Operation Cost Management in the Service Industry in Shandong

The Pearson correlation coefficient between material and equipment costs and the benefits of operation cost management is 0.497 and P<0.01, indicating that there is a correlation between material and equipment costs and the benefits of operation cost management, and it is a general correlation. This Pearson correlation coefficient value of 0.497 indicates that there is a moderately positive correlation between material and equipment costs and operating cost management revenues. A p-value of less than 0.01 indicates that this correlation is highly significant, i.e., with a high degree of confidence that this correlation is not due to random factors. This means that in operational cost management, as the cost of materials and equipment increases, it is usually accompanied by an increase in operational cost management revenue. This correlation may exist because higher investment leads to higher efficiency or better equipment quality, which in turn produces higher operating cost management benefits. Therefore,

this finding emphasizes the need to consider the relationship between material and equipment inputs and operating gains in a comprehensive manner when developing operating cost management strategies and to further investigate the specific factors that contribute to this relationship.

5.1.3 Rental Costs Have a Significant Positive Effect on the Benefits of Operation Cost Management in the Service Industry in Shandong

The Pearson correlation coefficient between rental costs and the benefits of operation cost management is 0.523 and P<0.01, indicating that there is a correlation between rental costs and the benefits of operation cost management, and it is a general correlation. This Pearson correlation coefficient value of 0.523 indicates that there is a moderately positive correlation between leasing costs and operating cost management revenues. A p-value of less than 0.01 indicates that this correlation is highly significant, i.e., with a high degree of confidence that this correlation is not due to random factors. This means that in operational cost management, as the cost of leasing increases, it is usually accompanied by an increase in operational cost management revenue. This correlation may exist because higher lease costs usually mean a better location or a larger site, which leads to more customer traffic or a better production environment, which in turn generates higher operating cost management revenues. Therefore, this finding emphasizes the need to consider the relationship between leasing costs and operating returns in a comprehensive manner when formulating operating cost management strategies and to further investigate the specific factors that contribute to this relationship.

Table 5.1 Hypothesis Testing

NO.	Hypothesis	Result
H1	Human resource costs have a significant positive effect on the benefits of operation cost management in the service industry.	Established
H2	Material and equipment costs have a significant positive effect on the benefits of operation cost management in the service industry.	Established
H3	Rental costs have a significant positive effect on the benefits of operation cost management in the service industry.	Established

5.2 Recommendation

5.2.1 Optimizing Human Resource Costs Management

According to the results of the study, human resource costs have a significant positive impact on the effectiveness of operating cost management in the service

industry. To maximize this positive impact, service industries can take several measures. Firstly, firms can invest in staff training and development to improve the professional skills and service quality of their staff, thereby increasing customer satisfaction and loyalty and, hence, operation cost management benefits. Secondly, optimize recruitment and human resource management processes to ensure an efficient hiring process and selection of employees in line with the company's culture and values, as well as building good employee relations to improve employee job satisfaction and performance. It is also key to implement an incentive and reward system. Establishing an effective incentive and reward system can motivate employees to actively participate in business operations and improve their performance, which in turn improves the effectiveness of operating cost management. In addition, providing a good working environment and welfare benefits are also necessary. Focusing on the working environment and welfare benefits of employees improves job satisfaction and loyalty, reduces employee turnover, and lowers human resource costs. Finally, the adoption of technology and automation tools is also important. The introduction of advanced technology and automation tools can improve efficiency, reduce human resource costs, and optimize the benefits of operating cost management. By taking these steps, the service industry can maximize the positive impact of HR costs on operational cost management benefits, leading to higher business performance and profitability.

5.2.2 Rationalizing Material and Equipment Costs

In the service industry, research has shown that material and equipment costs have a significant positive impact on the effectiveness of operating cost management. To take full advantage of this impact, the service industry can take several measures to optimize material and equipment cost management. First, refined procurement management is key. By seeking suitable suppliers, negotiating preferential terms, and implementing supply chain management, the procurement process can be optimized and procurement costs can be reduced. Second, improving equipment utilization is critical. Regular maintenance and upkeep of equipment ensures that it is in optimal operating condition, reduces repair and replacement costs, and extends its useful life. In addition, investing in technological upgrades and innovations can improve productivity and quality, reduce production costs, and further increase operational cost management benefits. Optimizing inventory management, controlling cost fluctuations, and improving supply chain efficiency are also necessary steps. By accurately assessing demand, formulating flexible sourcing strategies, and establishing close partnerships with suppliers, inventory costs can be reduced, cost controllability and stability can be ensured, and the competitiveness and profitability of enterprises can be enhanced. By implementing these comprehensive measures, the service industry can maximize the positive impact of material and equipment costs on the effectiveness of operational cost management and ensure sustainable business development.

5.2.3 Improving Rental Costs

According to the results, leasing costs have a significant positive impact on the effectiveness of operating cost management in the service industry. To maximize the impact, service industries can take several steps to optimize lease cost management. First, review existing lease agreements and look for opportunities to optimize lease terms to ensure the most favorable lease costs and terms. Second, improve operational cost management effectiveness by enhancing resource utilization, optimizing the use of leased facilities and space, avoiding resource wastage, and reducing cost per unit. Next, actively negotiate with landlords or leasing companies for more favorable lease terms, such as extending the lease term or reducing the rate of rent increase, to further reduce leasing costs. Additionally, based on actual demand and business development plans, plan the use of leasing resources in a detailed manner to avoid excessive or insufficient leasing, maximize resource utilization, and reduce leasing costs. Finally, consider sharing leasing resources with other enterprises or organizations, such as sharing office space or equipment, to reduce leasing costs and potentially gain additional opportunities for cooperation and resource sharing. Through these measures, the service industry can maximize the positive impact of leasing costs on the effectiveness of operational cost management and improve the competitiveness and profitability of the business.

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Appendix Questionnaire

Dear Sir/Madam,

Thank you for your participation in this questionnaire survey. The survey will be conducted anonymously, and your relevant information will be kept confidential. Thank you again for your cooperation.

Part Ⅰ:

1. Gender ☐ Male ☐ Female

2. Age ☐ under 30 ☐30-50 ☐ over50

3. Education ☐ High school and below ☐ Master degree ☐Bachelor degree ☐ Others

4. Position ☐ Operation ☐ Lecturer/instructor ☐ Others

5. Tenure in current position (year)

☐less than 1 year ☐1-2 years ☐3-5 years ☐6-7 years ☐more than 7 years

Part Ⅱ: Please judge to what extent you agree with the following statement, please choose the most appropriate option, and mark the corresponding number "√". The questionnaire used Likert scale, ranging from 1 to 5 in which 1 indicates strongly disagree (or strongly disagree), 2 indicates relatively disagree (or relatively disagree), 3 indicates neutral, 4 indicates relatively agree (or relatively agree), and 5 indicates strongly agree (or strongly agree)

Measuring item	Strongly disagree	Disagree	General	Agree	Strongly agree
Human Resource Costs					
1. For your company/organization, do human resource costs play an important role in operations?					

2. Do you think that effective human resource management can reduce your organization's operating costs?					
3. Do you think that investing in employee training and development will result in long-term operational cost savings?					
4. Do you think employee benefits and incentives have a significant impact on increasing productivity and reducing HR costs?					
5. Do you think optimization of human resource management can help companies better achieve their target costs?					
6. Do you believe that organizations should invest more in human resources to improve operational efficiency and performance?					
Material and Equipment Costs					
1. For your company/organization, do materials and equipment costs play a significant role in operations?					
2. Do you think that effective materials and equipment management can reduce your organization's operating costs?					
3. Do you think that investing in advanced production equipment and technology will result in long-term operating cost savings?					
4. Do you think material procurement costs and inventory management have a significant impact on reducing overall operating costs?					
5. Do you believe that technological innovation and production process optimization can help companies better achieve their target costs?					

6. Do you think companies should invest more in materials and equipment to improve operational efficiency and performance?					
Rental Costs					
1. For your company/organization, do rental costs play a significant role in operations?					
2. Do you think that effective rent management can reduce the operating costs of your organization?					
3. Do you think the level of rental cost affects the fixed cost burden of the organization?					
4. How do you think the reasonable control of rental cost will affect the productivity and competitiveness of the enterprise?					
5. Do you think reasonable rental management can improve the liquidity and financial stability of enterprises?					
6. Do you think enterprises should invest more in rent to improve operational efficiency and performance?					
Benefits of Operation Cost Management					
1. What do you think are the obvious benefits that effective operational cost management can bring to an organization?					
2. Do you think that optimization of cost management can improve the competitiveness of a company?					
3. Do you think effective cost management can lead to higher profits and financial stability?					
4. Do you think that companies should pay more attention to operational cost management to achieve long-term sustainable development?					