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Plan to increase the satisfaction of offshore technical personnel of Company Z

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Master in Applied Management

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ISCTE-IUL

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Professor Sofia Lopes Portela, Assistant Professor, ISCTE-IUL

September, 2024



BUSINESS
SCHOOL

Department of Marketing, Operations and General
Management

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Abstract

This thesis explores the job satisfaction of frontline employees in Z Company, a subsidiary of China Railway focusing on ship management, leasing, and construction. Employing a multi-method approach, the study integrates various research methods to gain a comprehensive understanding of the factors influencing employee satisfaction.

Firstly, a questionnaire survey was conducted based on Paul Spector's Job Satisfaction Survey. A comprehensive questionnaire was designed to cover nine dimensions of job satisfaction and distributed among 150 offshore technicians. This quantitative approach provided valuable insights into the employees' perceptions of their work environment, salary, and other aspects.

Secondly, in-depth interviews were conducted with eight representative employees, including frontline technicians and resigned staff. These interviews offered qualitative data that supplemented the questionnaire findings, providing a richer and more nuanced understanding of the issues faced by employees.

Furthermore, the study applied Herzberg's two-factor theory to analyze the collected data. This approach enabled the identification of hygiene factors and motivational factors affecting job satisfaction, highlighting areas for improvement.

Through correlation analysis and the application of Herzberg's theory, the study revealed key areas where Z Company can enhance job satisfaction among its frontline employees. These include improving salary competitiveness, improving the work environment, providing better career development opportunities, and strengthening communication and support systems. The findings underscore the importance of addressing these aspects to reduce turnover and promote the sustainable development of Z Company.

Keywords: Job Satisfaction, Two-Factor Theory, Offshore Work, Data Analysis, Career Development, Questionnaire

JEL Classification: M12, M19

Resumo

Esta tese explora a satisfação profissional dos colaboradores da linha da frente da Z Company, uma subsidiária da China Railway com foco na gestão, leasing e construção de navios. Empregando uma abordagem multimétodo, o estudo integra vários métodos de investigação para obter uma compreensão abrangente dos fatores que influenciam a satisfação dos colaboradores.

Em primeiro lugar, foi realizada uma pesquisa por questionário com base no Inquérito de Satisfação no Trabalho de Paul Spector. Foi elaborado um questionário abrangente para cobrir nove dimensões da satisfação no trabalho e distribuído por 150 técnicos offshore. Esta abordagem quantitativa forneceu informações valiosas sobre as percepções dos colaboradores sobre o seu ambiente de trabalho, salário e outros aspetos.

Em segundo lugar, foram realizadas entrevistas aprofundadas a oito funcionários representativos, incluindo técnicos da linha da frente e funcionários despedidos. Estas entrevistas forneceram dados qualitativos que complementaram as conclusões do questionário, proporcionando uma compreensão mais rica e matizada dos problemas enfrentados pelos colaboradores.

Além disso, o estudo aplicou a teoria dos dois fatores de Herzberg para analisar os dados recolhidos. Esta abordagem permitiu a identificação de factores de higiene e factores motivacionais que afectam a satisfação no trabalho, destacando áreas a melhorar.

Através da análise de correlação e da aplicação da teoria de Herzberg, o estudo revelou áreas-chave onde a Empresa Z pode aumentar a satisfação no trabalho entre os seus colaboradores da linha da frente. Estas incluem a melhoria da competitividade salarial, a melhoria do ambiente de trabalho, a disponibilização de melhores oportunidades de desenvolvimento de carreira e o reforço dos sistemas de comunicação e de apoio. As conclusões realçam a importância de abordar estes aspetos para reduzir a rotatividade e promover o desenvolvimento sustentável da Empresa Z.

Palavras-Chave: Satisfação no Trabalho, Teoria dos Dois Factores, Trabalho Offshore, Análise de Dados, Desenvolvimento de Carreira, Questionário

JEL Classification: M12, M19

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Glossary

ANOVA - Analysis of Variance

JSS - Job Satisfaction Survey

HRM - Human Resource Management

SWOT-Strengths、Weaknesses、Opportunities、Threats

1. Introduction

Z Company is a branch of China Railway that focuses on ship management, leasing and construction. Since its establishment in 2007, Z Company has successfully implemented a series of key offshore engineering projects such as submarine tunnels, offshore bridges and wind turbines with its extraordinary professional strength, and has made outstanding contributions to promoting the development of global marine engineering construction. However, with the continuous expansion of business, especially the management of offshore technical teams, it is gradually becoming an important challenge facing the company.

Z Company has nearly 200 excellent employees, of which the proportion of front-line employees is as high as 75%. They are not only a solid foundation for the company's steady development, but also the core force to promote the company's innovation and progress in the field of marine engineering. However, in recent years, with the expansion of the company's business to the world, the diversity of regions and cultures has made the communication difficulties within the team increasingly prominent, and gradually become a key factor hindering the efficiency of team collaboration. At the same time, technical personnel are under heavy work pressure, and the balance between work and life has become increasingly difficult to grasp, which undoubtedly buries hidden dangers for the harmony, stability and long-term development of the team, and also leads to an increase in turnover rate.

More importantly, the shortcomings in welfare benefits, career development and training support are gradually wearing away the work enthusiasm and satisfaction of technical personnel. This is not only related to the personal career growth and happiness of employees, but also has a direct impact on the company's overall operational efficiency and market competitiveness. Therefore, how to effectively improve the job satisfaction of front-line employees has become a pressing issue for Z Company.

In order to gain a deeper understanding of and improve this situation, this thesis aims to comprehensively analyze the deep-seated reasons for the low job satisfaction of Z Company's front-line employees through the comprehensive use of multiple research methods, and propose practical improvement measures. We will carefully design a questionnaire, widely collect employees' real opinions and feedback, and combine in-depth interviews with resigned employees in order to more comprehensively grasp the employees' inner needs and career expectations. In addition, we will also use Herzberg's two-factor theory to conduct a detailed analysis of the data obtained from the dual perspectives of job satisfaction and job dissatisfaction, so as to reveal the root cause of the problem.

The structure of this thesis is as follows:

The first chapter is the introduction. In this chapter, we will introduce the research background, purpose and significance of Z Company in detail, clarify the core research content and direction of this thesis, and provide readers with a clear research framework.

Chapter 2 is a literature review. We will sort out and summarize the literature in related research fields at home and abroad to provide a solid theoretical basis and reference basis for the in-depth research of this article, so that readers can have a more comprehensive understanding of the research status and development trends in this field.

Chapter 3 will elaborate on the research methods adopted in this article, including the design principles and implementation steps of the questionnaire, the specific techniques of interviewing resigned employees, and the specific application of Herzberg's two-factor theory in this article, etc., to ensure the scientificity and effectiveness of the research.

Chapter 4 introduces the overall profile of Z Company in detail, traces the company's historical development, and explains its business scope as an important branch of China Railway Group focusing on ship management, leasing and construction. This chapter also deeply analyzes the current situation of Z Company's human resources, including the age level, educational background and job distribution of employees, showing the composition characteristics of the company's talent team. In addition, this chapter also introduces Z Company's salary structure and welfare system in detail, from basic salary, position allowances, performance bonuses to diversified subsidies and benefits, comprehensively analyzing the company's incentive mechanism for employees, providing a solid data foundation for subsequent research, and facilitating in-depth exploration of employee job satisfaction and its influencing factors.

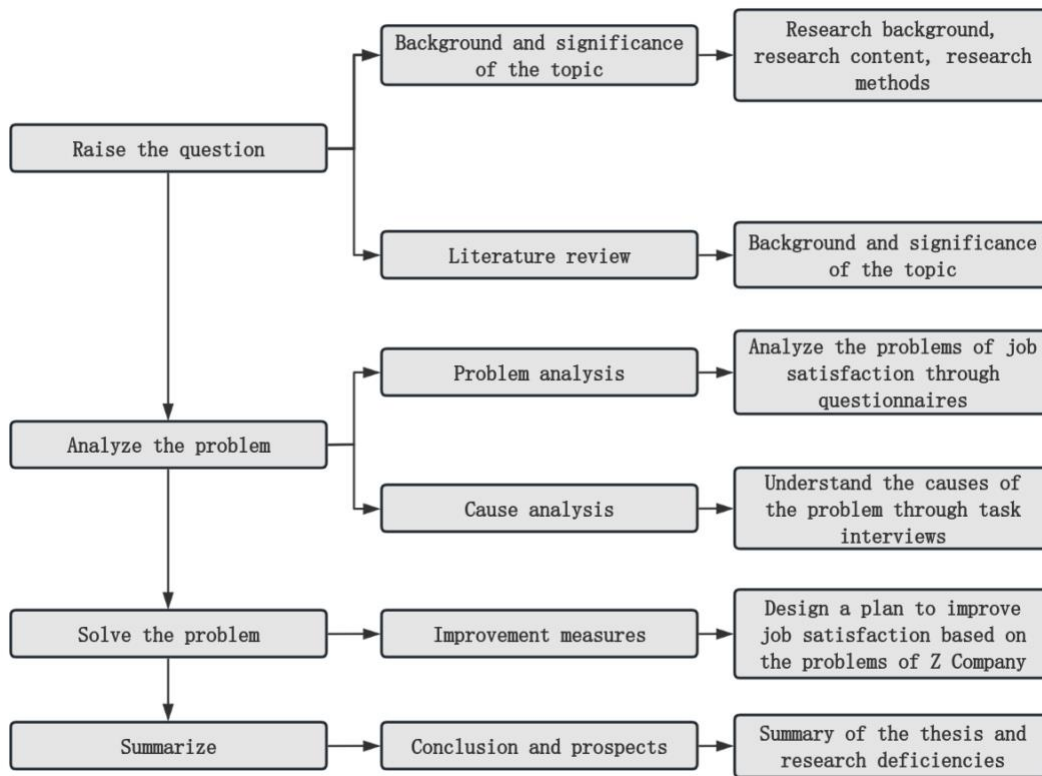
Chapter 5 uses a variety of analytical methods to conduct a detailed analysis of the collected sample data. Through frequency analysis and other methods, the basic characteristics of the sample are revealed; then, descriptive statistical analysis, reliability analysis and validity analysis are used to comprehensively evaluate the current status of job satisfaction of employees in Company Z. Furthermore, with the help of Pearson and Spearman correlation analysis, the intrinsic connection between the various satisfaction dimensions and their complex relationship with the personal characteristics of employees are deeply explored. In addition, in-depth feedback from employees is obtained through interviews, which further enriches the research perspective. Finally, combined with Herzberg's two-factor theory, this chapter systematically diagnoses the key areas that Company Z needs to improve in improving employee satisfaction, laying a solid foundation for the subsequent proposal of targeted improvement strategies.

Chapter 6 combines the information analyzed in Chapters 4 and 5 to propose an improvement plan for the job satisfaction of employees in Company Z.

Finally, in Chapter 7, we will summarize and look forward to the research results of the whole article, point out the possible deficiencies in the research process and the direction of future improvement.

Figure1. 1 is the research framework of this thesis:

Figure1. 1Research Framework



Source: the author(2024)

2. Literature Review

2.1. Definition of Employee Satisfaction

Job satisfaction, as a multi-dimensional and complex concept, has attracted widespread attention from scholars since the 1930s. This concept was first proposed by Hoppock (1935) in 1935. Through research, he found that the relationship between age and job satisfaction is not static, but is affected by a variety of factors. As employees adapt to their work environment, improve their job proficiency, or transition to a job area that better matches their expectations, their job satisfaction may increase. However, some studies have pointed out that there is no significant relationship between age and job satisfaction, and in some cases, employees may even be less fond of their career as they age. These differential findings reveal the complexity of the relationship between job satisfaction and age.

With the passage of time, more and more scholars have begun to explore the connotation and influencing factors of job satisfaction from different perspectives. In 1963, Friedlander (1963) concluded through in-depth research that job satisfaction is mainly composed of three factors: social and technical environment, intrinsic aspects of work, and recognition obtained through promotion. He further pointed out that different employee groups place different emphasis on these factors, thus showing significant differences in age, salary and career patterns. Although these factors have an impact on overall job satisfaction, surprisingly, different employee groups do not show significant differences in overall satisfaction. This finding sheds useful light on our understanding of the multidimensional nature of job satisfaction and employees' unique preferences for the work environment.

By 1969, Locke (1969) made new breakthroughs in his understanding of job satisfaction. He believes that job satisfaction is not only affected by the intrinsic characteristics of the job, but also closely related to personal values, expectations and overall evaluation of the job. Simply put, job satisfaction is an individual's feeling about the extent to which his or her job satisfies his or her personal values, expectations, and needs. This perspective pushes the research on job satisfaction into a more personalized and in-depth direction.

Entering the 1990s, Judge and Watanabe's (1993) research in 1993 revealed a significant and mutually influencing relationship between job satisfaction and life satisfaction. They found that increases in job satisfaction and life satisfaction are interrelated, that is, increases in one's satisfaction will lead to increases in the other's satisfaction. However, this relationship appears relatively weak in longitudinal studies (spanning a 5-year period), especially the effect of job satisfaction on life satisfaction. This finding raises further questions about work-life balance and the interplay between the two.

In 1996, British scholar Clark (1996) further enriched our understanding of job satisfaction through a study of 5,000 British employees. He found that job satisfaction is closely related to factors such as gender, age, education level, working hours and company size. Among them, female, older and less educated employees tend to report higher job satisfaction. In addition, job characteristics, such as promotion opportunities, income levels, and work values, are also important factors that influence job satisfaction. These findings provide strong evidence for a more comprehensive understanding of factors influencing job satisfaction.

As research continues, we have come to realize the close connection between job satisfaction and the work environment. A good working environment not only enhances employee productivity, loyalty, and commitment (Raziq & Maulabakhsh, 2015), but also has a positive impact on employee job satisfaction. At the same time, various factors such as workload, stress level, management recognition and appreciation, corporate culture, and work environment will also have an impact on job satisfaction and work effectiveness (Shynu et al., 2023). In particular, Kurniawaty and Ramlawati (2019) found in their 2019 study that work environment has a significant positive impact on job satisfaction, while stress has a significant negative impact on job satisfaction. In addition, they also found that work environment and stress have a negative and positive significant impact on employee turnover intention respectively, while job satisfaction has a negative and significant impact on turnover intention. This research highlights the importance of improving the work environment, reducing work stress, and improving employee job satisfaction in reducing employee turnover intentions and reducing actual turnover rates.

To sum up, job satisfaction is a complex and multidimensional concept that involves employees' overall feelings and evaluations of their work. Aspects ranging from salary, promotions, co-worker relationships to supervision methods all have an impact on employee job satisfaction. More importantly, job satisfaction is not only related to employees' quality of life and happiness, but also closely related to employees' work performance, attendance rate and turnover intention. Therefore, a deeper understanding of the multidimensionality of job satisfaction and how it interrelates with individual and organizational well-being is crucial to advance individual and organizational development (Judge et al., 2020). By continuously improving the working environment, reducing work pressure, and paying attention to employees' individual needs, we can effectively improve employee job satisfaction, thereby promoting organizational cohesion and efficiency.

2.2. Measurement of job satisfaction

Job satisfaction is a key indicator to measure employees' feelings about their work environment and overall experience. It plays an indispensable role in understanding and improving organizational atmosphere and improving work efficiency. As early as 1985, Spector (1985) launched the Job Satisfaction Survey (JSS) scale in the field of human services. The scale is based on an extensive literature review and carefully selects nine core aspects of job satisfaction. Through in-depth project analysis, reliability assessment and validity testing, a comprehensive scale containing 36 items was finally formed. The JSS scale has demonstrated its high reliability and validity in the field of human services and has become a powerful tool for assessing employee satisfaction in this industry. In recent years, Spector (2021) has further expanded the JSS scale in the book "Industrial and Organizational Psychology", adding seven dimensions: salary, promotion opportunities, supervision, additional benefits, colleague relationships, work tasks and communication, making the measurement of job satisfaction more detailed and comprehensive.

In another field, Traynor and Wade (1993) developed the Measure of Job Satisfaction (MJS) scale to monitor the morale of community nurses. They used principal component analysis and Varimax rotation techniques to identify five key job satisfaction dimensions, and through field surveys of large samples, they fully verified the reliability and validity of the scale, providing a practical tool for monitoring the job satisfaction of community nurses.

Research on employee job satisfaction in the service industry has revealed a variety of complex influencing factors. In a comparative study by Bednarska and Szczyt (2015), it was found that national factors had a particularly prominent impact on job satisfaction, and there were significant differences in employee job satisfaction between different countries. At the same time, personal factors such as occupation, employment contract, income level, and organizational factors such as company size and organizational activity type also have an important impact on job satisfaction.

In the field of construction project management, Ling and Loo (2015) emphasized in their research that salary level, job autonomy, and task importance are the most critical factors affecting project managers' job satisfaction. This finding provides a valuable reference for project design and management.

In the study of employee satisfaction in the IT department in Kuwait, Al-Shammari (2021) proposed a structural model with six elements, and verified the significant correlation between multiple factors such as salary compensation, work environment, intangible benefits, support and communication and employee satisfaction through empirical data, providing management with specific suggestions for improving the work environment and improving human resource management strategies.

In summary, the measurement research of job satisfaction has been widely involved in multiple industries and positions. Scholars have developed a variety of measurement tools based on different backgrounds and needs. These tools not only provide a basis for scientifically evaluating employee satisfaction, but also reveal the complexity of factors affecting job satisfaction. Future research can further explore the differences in employee satisfaction and its influencing factors in different cultural backgrounds, so as to provide comprehensive guidance for improving employee satisfaction and promoting organizational development.

2.3. The Impact of Offshore Work Characteristics on Employee Psychology and Behavior

As globalization accelerates, offshore work has become an indispensable part of many industries. However, the particularities of working at sea, such as long-term isolation environments and irregular working hours, have a profound impact on employees' psychology and behavior. This article takes a closer look at these impacts and looks at effective strategies to deal with them.

The characteristics of offshore work are significant, including long periods of time away from land, closed nature of work, uncertainty of time, and heavy work pressure. Together, these characteristics shape the unique challenges faced by those working at sea. Chronic loneliness and social isolation are common dilemmas they have to face. According to research by Fossum et al. (2013), employees in the offshore oil industry generally feel a strong sense of loneliness, which is accompanied by the emergence of mental health problems. This psychological state poses a potential threat to employees' work efficiency and may further evolve into more serious psychological problems.

At the same time, the uncertainty and high risks of the offshore working environment put employees under tremendous psychological pressure. Research by Mette et al. (2018) revealed that employees in the offshore wind power industry generally suffer from heavy work pressure and deep anxiety. This continuous psychological burden not only affects the mental health of employees, but may also lead to behavioral disorders, thereby posing a threat to the safety of offshore operations.

In addition, the characteristics of working at sea have a significant impact on employee job performance and attendance. Long hours of continuous work and high-intensity work pressure can easily lead to employee fatigue, which in turn affects their concentration and work efficiency. Psychological stress and anxiety may also lead to an increase in employee absenteeism. As shown in the study of Ulleberg and Rundmo (1997), there is a close correlation between work stress and absenteeism among offshore oil employees.

Employees are not helpless in the face of these challenges. They adopted a variety of coping strategies and adaptive behaviors to cope with the stress of working at sea. Seeking social support, maintaining a healthy lifestyle, and actively coping with work stress are common methods they use. Research by Chen et al. (2003) found that Chinese offshore oil workers strive to adapt to the pace of life at sea by cultivating personal independence and actively seeking social support.

Although a large amount of research has focused on the impact of offshore work characteristics on employee psychology and behavior, there is still much uncharted territory waiting to be explored. Future research can further explore the specific mechanisms of offshore work characteristics on employee mental health, in order to provide a more scientific basis for prevention and intervention measures. At the same time, we should also pay attention to the adaptive changes of employees during long-term work at sea, explore their coping strategies, and evaluate the actual effects of these strategies on mental health.

In addition, organizational-level interventions are also an important direction for future research. How to reduce the negative impact on employees' psychology and behavior by improving the offshore working environment is a topic worthy of in-depth discussion. This may involve reasonable arrangements for working hours, regular assessment of employee mental health, and providing necessary psychological counseling.

In summary, the characteristics of working at sea have a profound impact on employee psychology and behavior. Problems such as loneliness, social isolation, psychological stress and anxiety not only reduce employees' work efficiency and quality of life, but may also bring unpredictable risks to the operation and safety of enterprises. Therefore, we must attach great importance to the mental health and behavioral problems of maritime workers and develop and implement effective prevention and intervention measures. Through scientific research and practice, we are expected to create a healthier and safer working environment for offshore workers, thereby improving their work efficiency and quality of life, while also laying a solid foundation for the long-term and stable development of the enterprise.

2.4. The Influence of Salary and Benefits on Employee Satisfaction

In current organizational behavior and human resource management research, the impact of compensation and benefits on employee satisfaction has become a core issue. These two factors are not only directly related to the vital interests of employees, but also are key factors affecting employees' work attitude, performance and retention rate. By comprehensively reviewing and analyzing multiple relevant literatures, we can gain a deeper understanding of how compensation and benefits affect employee satisfaction and provide managers with practical management suggestions.

First of all, salary is an important part of employees' work returns, and its impact cannot be underestimated. The research by Darma and Supriyanto (2017) clearly pointed out the direct impact of salary on employee satisfaction and job performance. They found that offering higher pay not only significantly increased employee satisfaction, but also led to improved job performance. This positive effect stems from the fact that compensation satisfies employees' material needs and recognizes the value and contribution of employees' work. Similarly, Lai's (2011) study also highlighted the positive relationship between job-, skill- and performance-based compensation design and employee satisfaction. This shows that a fair, reasonable and remuneration system that is closely linked to work performance, skills and performance can effectively improve employee satisfaction and stimulate employees' work enthusiasm and creativity.

In addition to salary, the welfare system is also one of the important factors affecting employee satisfaction. Research by Iqbal et al. (2017) found that good organizational culture, attractive benefits and salary are the keys to improving employee satisfaction and reducing employee turnover. As an important part of the salary system, the welfare system can provide employees with other values in addition to basic salary, such as health insurance, retirement plans, bonuses, etc. These benefits not only meet the basic living needs of employees, but also reflect the organization's care and attention to employees. Therefore, a complete and reasonable welfare system can significantly improve employee satisfaction and enhance employees' sense of identity and belonging to the organization.

It is worth noting that compensation and benefits do not exist in isolation in affecting employee satisfaction. They are interrelated and work together. Research by Ewool et al. (2021) found that salary satisfaction can enhance the positive impact of employee recognition on employee engagement. This shows that while salary and benefits meet employees' basic living needs, they can also further improve employee satisfaction by increasing employees' work motivation and participation. This interrelation and joint effect makes compensation and benefits play a more important role in improving employee satisfaction.

In addition, different studies have also revealed the specific mechanism of the impact of compensation and benefits on employee satisfaction. For example, research by Vizano et al. (2021) found that salary and career development have a positive impact on managers' job satisfaction, which in turn affects their turnover intentions. This shows that in addition to material rewards, employees are also concerned about personal career development and promotion opportunities. Therefore, when designing salary and benefit systems, organizations should fully consider employees' career development needs and provide sufficient promotion opportunities and vocational training to stimulate employees' work potential and creativity.

Based on the above analysis, we can draw the following management suggestions: First, organizations should establish a fair, reasonable and closely linked compensation system to employees' work performance, skills and performance to improve employee satisfaction and stimulate employees' work enthusiasm and creativity. . Secondly, organizations should design a complete and reasonable welfare system to meet employees' basic living needs and enhance employees' sense of identity and belonging to the organization. At the same time, organizations should also pay attention to employees' career development needs and provide sufficient promotion opportunities and vocational training to stimulate employees' work potential and creativity. Finally, organizations should regularly evaluate the implementation effects of the salary and benefit system, and timely adjust and improve the system content to ensure that it can continue to meet employee needs and improve employee satisfaction. Through the implementation of these measures, organizations will be able to build a more positive and efficient work environment, promote the overall development of employees and lay a solid foundation for the long-term development of the organization.

2.5. Application Cases of Herzberg's Two-Factor Theory in Improving Employee Satisfaction

Herzberg's two-factor theory has become one of the important theories in the fields of organizational psychology and human resource management since it was proposed by Herzberg et al. (1959) in the book "The Motivation to Work". This theory clearly points out two key factors that affect employee job satisfaction: hygiene factors and motivational factors.

In the field of public services, according to the research case of Thant and Chang (2021), Myanmar civil servants are particularly sensitive to motivating factors such as work achievements and social recognition. They found that both motivational factors and hygiene factors had a significant impact on job satisfaction among civil servants. Especially in the cultural context of Myanmar, family relationships and religious beliefs also have a unique impact on the job satisfaction of civil servants, further proving the applicability of Herzberg's two-factor theory in different cultural environments.

In terms of higher education institutions, Mehrad (2020) assessed the job satisfaction of academic employees in Malaysian universities and emphasized the motivational factors in Herzberg's theory, such as achievement, recognition and personal growth, as important for improving the job satisfaction of academic employees. importance. This finding provides higher education institutions with specific guidance on how to improve employee satisfaction and performance by meeting their employees' intrinsic motivations.

Furthermore, Mohammed et al's (2021) study focused on the job satisfaction of faculty members at the University of Development Studies in Ghana. They found that although

certain factors in the work environment, such as the promotion process, had a negative impact on job satisfaction, high recognition of academic qualifications remained an important source of faculty satisfaction. This finding once again validates the validity of Herzberg's two-factor theory in identifying the determinants of employee satisfaction.

In the hotel industry, the study by Sobaih and Hasanein (2020) challenges the applicability of Herzberg's theory in the hotel industry in developing countries. They found that hygiene factors (such as pay and working conditions) were actually the main sources of job satisfaction in the Egyptian hotel industry, while motivational factors were negatively related to job satisfaction. This finding reminds us that the influence of different cultural and economic backgrounds needs to be considered when applying Herzberg's theory.

The empirical research review by Mitsakis and Galanakis (2022) further shows that Herzberg's two-factor theory still has significant applicability and explanatory power in the 21st century workplace. The theory has demonstrated strong explanatory power for employee satisfaction and motivation in diverse industries such as correctional facilities, retail, and telecommunications.

Finally, Ann and Blum (2020) focused on the motivation and job satisfaction of older employees in the hotel industry. Their study found that recognition and the job itself have a significant positive impact on job satisfaction, while technical supervision and personal life have a negative impact on job dissatisfaction. This finding provides valuable strategic suggestions for the hotel industry in motivating older employees.

To summarize, Herzberg's Two-Factor Theory has been widely used and proven in different industries and scenarios, from public services to higher education to the wider workplace such as the hospitality industry, where the theory is understood and provide a powerful framework for improving employee job satisfaction. At the same time, these studies also remind us that when applying Herzberg's theory, we should fully consider the influence of cultural, economic and organizational characteristics and other factors.

3. Methodology

3.1. Research objectives

This project aims to deeply study and effectively improve the job satisfaction of Z Company's offshore technicians.

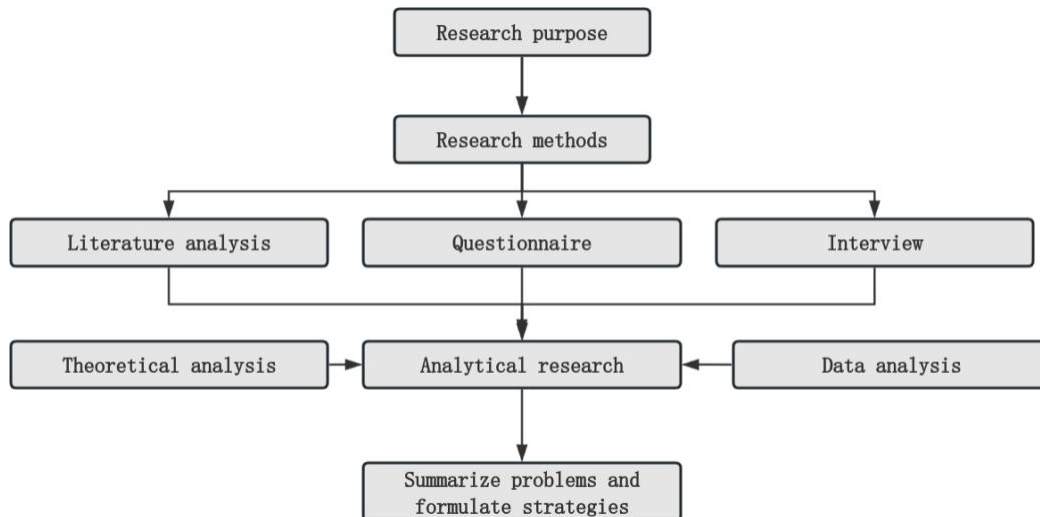
By using Paul Spector's job satisfaction scale, a questionnaire was developed and distributed to systematically collect employees' real feedback on job satisfaction.

At the same time, combined with Herzberg's two-factor theory, the core needs and expectations of Z Company's offshore technicians were deeply analyzed. Based on these analyses, targeted strategies were formulated to comprehensively improve employees' job satisfaction, thereby enhancing employees' loyalty to the company and work efficiency.

3.2. Overview of Research Methods

This study uses the following method to analyze the current satisfaction of offshore technicians in Z Company (see Figure3. 1).

Figure3. 1Research Methods



Source: the author(2024)

(1) Literature analysis method: By searching and reading published research thesis, reports and books, we can understand the basic knowledge, important findings and current research directions in the field of job satisfaction. In this process, we focus on the classic theories about job satisfaction, the various factors that affect employee satisfaction, and the effective methods to improve employee satisfaction. In this way, we can find strong theoretical support and practical reference information for the research of this project.

(2) Questionnaire method: Based on Paul Spector's job satisfaction scale, this study carefully designed a questionnaire and distributed it widely to Z Company's offshore technicians through the Questionnaire Star online survey platform. The questionnaire distribution work was officially launched on July 9, 2024, and the collection was successfully completed on July 13 of the same year. A total of 166 questionnaires were distributed and 150 valid questionnaires were successfully collected, with a collection rate of up to 90%. This high collection rate provides sufficient and reliable data samples, enabling in-depth analysis of the job satisfaction of Z Company's offshore technicians. The questionnaire content covers multiple dimensions such as payment, promotion opportunities, supervision and management, welfare benefits, performance bonuses, work processes, colleague relationships, nature of work content and communication, and comprehensively evaluates the work experience of offshore technicians in different aspects. These data not only help to identify the key factors affecting job satisfaction, but also provide an important reference for Z Company to formulate more reasonable and effective human resource management strategies in the future.

(3) Interview method: In order to gain a deeper understanding of the real situation of Z Company's employees, this study deliberately selected representative interviewees, including two experienced ship managers, a professional chief engineer, and three technical backbones, and conducted in-depth interviews with two former employees. The interviewees covered grassroots technical employees, managers, and former employees at sea. A combination of telephone interviews and field interviews was used to conduct situational interviews with the interviewees to find the underlying reasons affecting Z Company's employee satisfaction.

(4) Two-factor analysis method: Combining the questionnaire results, interview results, and some existing information about Z Company, the two-factor analysis method was used to analyze what areas Z Company needs to improve now, and to set goals and directions for improving Z Company's employee job satisfaction plan.

3.3. Questionnaire

This study designed a questionnaire based on Paul Spector's Job Satisfaction Questionnaire (JSS), which contains 36 items (see Appendix A) to comprehensively assess employees' job satisfaction. These items are divided into nine different dimensions:

- (1) payment: Amount of pay and pay policies.
- (2) Promotion: Chances to be promoted.
- (3) Supervision: Focuses primarily on direct supervisor.

- (4) Fringe Benefits: Benefits provided other than salary.
- (5) Contingent Rewards: performance based rewards.
- (6) Operating Procedures: required rules and procedures.
- (7) Coworkers: The people with whom the person works.
- (8) Nature of Work: Whether the work is challenging, whether it can bring out the skills and talents of employees:and whether it makes employees feel meaningful
- (9) Communication: How well employees are kept informed.

The 36 questionnaire questions in this scale are classified according to the above 9 dimensions. (See Table3. 1)

Table3. 1Paul Spector Job Satisfaction Scale

Dimension	Content
Payment	1.I feel I am being paid a fair amount for the work I do.
	10.Raises are too few and far between.
	19.I feel unappreciated by the organization when I think about what they pay me.
	28.I feel satisfied with my chances for salary increases.
Promotion	2.There is really too little chance for promotion on my job.
	11.Those who do well on the job stand a fair chance of being promoted.
	20.People get ahead as fast here as they do in other places.
	33.I am satisfied with my chances for promotion.
Supervision	3.My supervisor is quite competent in doing his/her job.
	12.My supervisor is unfair to me.
	21.My supervisor shows too little interest in the feelings of subordinates.
	30.I like my supervisor.
Fringe Benefits	4.I am not satisfied with the benefits I receive.
	13.The benefits we receive are as good as most other organizations offer.
	22.The benefit package we have is equitable.
	29.There are benefits we do not have which we should have.
Contingent Rewards	5.When I do a good job, I receive the recognition for it that I should receive.
	14.I do not feel that the work I do is appreciated.
	23.There are few rewards for those who work here.

	32.I don't feel my efforts are rewarded the way they should be.
Operating Procedures	6.Many of our rules and procedures make doing a good job difficult.
	15.My efforts to do a good job are seldom blocked by red tape.
	24.I have too much to do at work.
	31.I have too much paperwork.
Coworkers	7.I like the people I work with.
	16.I find I have to work harder at my job because of the incompetence of people I work with.
	25.I enjoy my coworkers.
	34.There is too much bickering and fighting at work.
Nature of Work	8.I sometimes feel my job is meaningless.
	17.I like doing the things I do at work.
	27.I feel a sense of pride in doing my job.
	35.My job is enjoyable.
Communication	9.Communications seem good within this organization.
	18.The goals of this organization are not clear to me.
	26.I often feel that I do not know what is going on with the organization.
	36.Work assignments are not fully explained.

Source: Paul E. Spector (1994)

The questionnaire process of this study can be divided into three core parts. First, basic information of employees is collected, which covers key data such as annual income, age, and position, providing background information for subsequent data analysis.

Second, the Paul Spector job satisfaction scale is used to comprehensively evaluate employees' job satisfaction through 9 dimensions and a total of 36 questions. The scoring mechanism is as follows:

(1) The scoring range is from 1 to 6, where "1" represents "strongly disagree", "2" represents "disagree", "3" represents "slightly disagree", "4" represents "slightly agree", "5" represents "agree", and "6" represents "strongly agree".

(2) For questions containing negative wording, we use the reverse scoring method. Specifically, 1 = 6, 2 = 5, 3 = 4, 4 = 3, 5 = 2, and 6 = 1. Another simple calculation method is to subtract the original score from 7 to get the reverse score.

(3) The numbers of the questions that need to be reverse scored are: 2, 4, 6, 8, 10, 12, 14, 16, 18, 19, 21, 23, 24, 26, 29, 31, 32, 34, 36.

(4) Score the four questions of each dimension (see Table3. 1) and pay attention to reverse scoring the questions with negative wording.

(5) The score range of each dimension is an average score. If the average score of a dimension reaches or exceeds 4 points, it means that the employees are satisfied with the dimension; if the average score is 3 points or below, it means that they are dissatisfied. This standard helps us accurately identify the specific dimensions that employees are dissatisfied with.

Finally, use the collected data for in-depth analysis to identify problems and develop targeted improvement strategies.

3.4. Data analysis of the questionnaire

According to the needs of the research purpose, this study used the management statistics software SPSS27.0 as the analysis tool and used JSS as the survey scale for collecting data. The specific analysis methods are as follows:

(1) Frequency analysis: By counting the frequency, percentage, effective percentage and cumulative percentage of each variable, the distribution of basic information such as gender, age, education level, marital status, position, work experience and annual income of offshore technicians was described, providing basic data support for subsequent in-depth research.

(2) Descriptive statistical description: By calculating statistical quantities such as mean, standard deviation and variance, the evaluation of offshore technicians on various factors of job satisfaction (such as salary, promotion opportunities, supervision and management, benefits, performance bonuses, operating procedures, colleague relationships, nature of work and communication) was described, revealing the overall satisfaction of employees with each factor and its variation.

(3) Reliability analysis: Cronbach's α coefficient was used to evaluate the internal consistency of the questionnaire to ensure that the questionnaire results can stably reflect the true characteristics of the participants.

(4) Correlation analysis is a statistical analysis method that explores the closeness between different variables. In order to understand the strength of the correlation between variables, this study uses the Spearman analysis method to conduct a correlation analysis on the relationship between age, education, marital status, position, annual income, length of service and overall job satisfaction in basic information.

(5) One-way ANOVA: used to analyze the impact of different individual characteristics (such as age, education, marital status, position, work experience and annual income) on employee job satisfaction. ANOVA reveals the differences between different groups in various dimensions of satisfaction, providing a basis for formulating targeted management strategies.

After the analysis is completed, this study will describe and explain the conclusions drawn from the data and put forward specific suggestions for improving the satisfaction of Z Company's offshore technicians.

3.5. In-depth interviews

The core goal of this study is to reveal the key factors that affect employee job satisfaction through in-depth and multi-dimensional interview analysis, and to find out the shortcomings and deficiencies of the company in human resource management, and then propose targeted improvement strategies. To achieve this goal, we carefully designed an interview plan covering grassroots employees, management and former employees, aiming to capture the voice of employees in all aspects and provide a solid scientific basis and practical reference for the company's human resource management decision-making. The following is a detailed explanation of the steps of the in-depth interview:

(1) Interview design and sample selection: This study carefully selected 8 representatives, including grassroots employees and management personnel who are currently working and have left. Through in-depth face-to-face communication and telephone interviews, we comprehensively collected their valuable opinions on job satisfaction, work environment, salary and benefits, career development path and team management, ensuring the comprehensiveness and depth of feedback.

(2) Customized design of interview outline: According to the characteristics of different interviewees, we carefully designed three interview outlines, covering all key aspects of job satisfaction. The questions were set from simple to complex, and open-ended questions were used to stimulate the active participation of the interviewees, so as to more accurately dig out the deep-seated reasons affecting job satisfaction.

(3) Detailed analysis of interview content: Through careful sorting and analysis of interview records, we found significant differences between management and grassroots employees in many aspects, such as job satisfaction, salary and benefits, work environment, and career development. Grassroots employees generally expressed dissatisfaction with excessive workload, insufficient leadership support, poor work environment, and unreasonable salary, while management was more concerned about the effective allocation of human resources and the improvement of work efficiency.

(4) The unique perspective of former employees: The feedback from former employees provides us with another important perspective. They mainly choose to leave because of the imbalance between work and family life, which reflects the great impact of the current work system on employees' personal lives. At the same time, they also pointed out problems such as unclear career development paths and insufficient salary competitiveness.

(5) Comprehensive analysis and summary: Based on an in-depth analysis of the interview content, we proposed key strategies to improve grassroots employees' job satisfaction, including ensuring the fairness of salary and benefits, improving the work environment, strengthening systematic career training, and establishing a transparent and fair promotion mechanism. At the same time, combined with the two-factor theory, we further analyzed the root causes that affect employee satisfaction, providing a solid theoretical basis for the company's improvement work.

3.6. Two-factor theory

As shown in Figure3. 2, according to Herzberg's two-factor theory, when intrinsic motivation factors (such as sense of achievement, recognition, etc.) are met, they will significantly enhance work motivation, while the lack of extrinsic motivation factors (such as work environment, salary, etc.) will greatly reduce employees' job satisfaction. This theoretical framework provides profound insights for research and ensures that improvement measures can accurately focus on the key factors to improve job satisfaction.

Figure3. 2Herzberg ' s Hygiene and Motivational Factor



Source: the author(2024)

4. Z Company's Frontline Job Analysis and Research

4.1. Z Company Overview

Z Company, as a state-owned enterprise under China Railway Group, focuses on the leasing, construction and management of engineering vessels. Since its establishment in 2007, the company has taken root in Jiangxi Province and gradually developed into an important force in the water construction operations of China Railway Group.

Looking back on history, Z Company was formerly the ship management office of a large enterprise. After a series of asset restructuring and business expansion, the company successfully transformed and became the only specialized subsidiary of the group focusing on water construction operations. Today, the company has a leading domestic construction fleet, and its business covers diversified fields such as port terminal engineering, steel structure manufacturing and installation, large bridge erection, and ship salvage, becoming one of the well-known leading enterprises in China.

In terms of business scope, Z Company is widely involved in the operation, leasing, and terminal loading and unloading services of engineering vessels. Since its establishment, the company has actively participated in many major domestic and foreign engineering projects, including a series of cross-sea bridges and the construction of multiple offshore wind farms in China. The successful implementation of these projects not only fully demonstrated the company's strong strength in the fields of bridge construction and offshore wind power construction, but also won it wide industry recognition and user praise.

In terms of ship strength, Z Company currently owns more than 20 engineering ships of various types. Among them, offshore construction ships account for a significant proportion, and their functions cover a variety of operations such as offshore bridge transportation and erection, offshore wind power foundation construction and wind turbine erection, offshore concrete pouring, and water steel pile insertion. It is worth mentioning that many of the company's ships have been praised by the media as "national heavy equipment", which is enough to demonstrate its leading position in the field of high-end engineering ships.

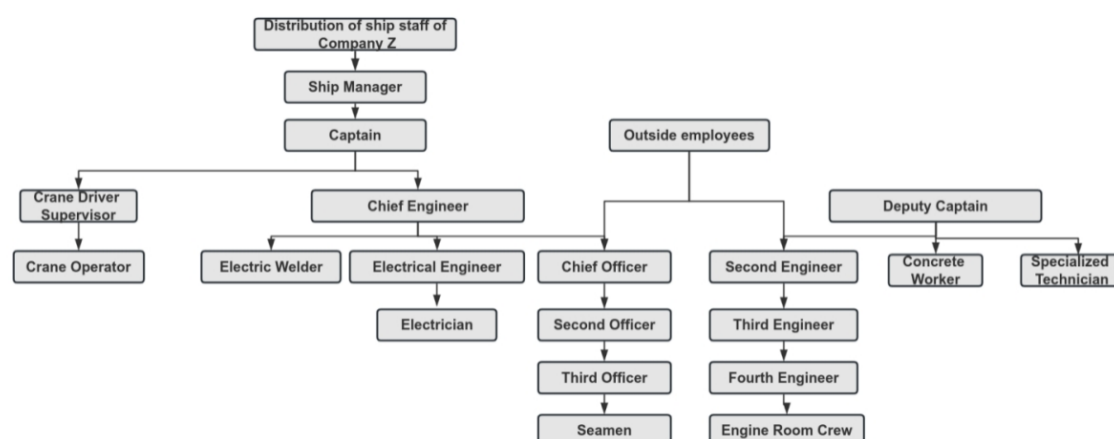
In order to better adapt to the needs of different construction sites, Z Company has divided its fleet into three professional management teams. The first fleet focuses on inland river construction, the second fleet is responsible for offshore construction, and the third fleet manages foreign construction projects. This management model with clear division of labor enables Z Company to deal with various complex water construction environments more efficiently and professionally, and continue to promote the progress and development of the industry.

4.2. Analysis of Human Resource Allocation and Changes of Company Z

According to the latest personnel statistics of Company Z, we can clearly understand that by the end of 2023, the total number of employees in the company has reached 208. Among this large workforce, 42 employees serve as office staff, who are responsible for the company's daily management and operations. The remaining 166 employees are all front-line technicians, who are distributed in various ships of the company and contribute their own strength to the development of the company. It is worth mentioning that these front-line technicians all hold different professional certificates required for their respective positions, and their professional qualities and skill levels have been fully recognized and affirmed.

According to the in-depth understanding of Company Z, the staff composition of each of its ships is not entirely composed of formal employees of Company Z (see Figure4. 1), but also includes a certain number of external personnel. These external personnel, together with the employees of Company Z, provide strong guarantees for the normal operation and safety management of the ship. Among these ship staff, the employees of Company Z mainly hold technical management positions. With their professional skills and rich experience, they play a pivotal role in ship operations.

Figure4. 1Z Company Job Framework



Source: Internal information of Company Z(2024)

At the same time, we cannot ignore some of the problems revealed by Z Company's internal data. Although the number of office staff is relatively stable each year, the total number of employees in the company has shown a decreasing trend year by year. This change may be related to various factors such as the company's development strategy and market environment. What is more noteworthy is that the proportion of front-line employees over 50 years old is increasing year by year. By the end of 2023, the proportion of employees in this age group has reached more than 60% (see Appendix B). This data undoubtedly

reveals the seriousness of the company's aging problem, and the company also needs to pay more attention and respond in future human resource planning.

4.3. Salary and working environment of offshore technicians of Company Z

4.3.1. Working conditions of Company Z

According to the relevant regulations of Company Z, the company's offshore technicians enjoy no more than 120 days of vacation each year. In addition to vacations, most of the technicians' time is closely connected with the engineering ship. They follow a strict 8-hour three-shift work system and are on call around the clock to ensure the continuity and safety of the ship's operation. Even when the ship is stagnant, there must be a dedicated person to stay behind and perform necessary maintenance work. Except for vacations and special circumstances, the staff basically have few opportunities to go ashore. On ordinary holidays, the company will distribute benefits such as daily necessities to care for and comfort these hard-working offshore technicians.

4.3.2. Salary and benefits

According to the "Z Company Position Wage System Method" issued by Z Company in 2021, the position system of Z Company consists of five units: basic salary, position salary, seniority salary, special salary and performance salary:

(1) Basic salary: two levels of 700 yuan and 800 yuan (see Table4. 1).

(2) Position salary: determined according to job responsibilities, skills, intensity and conditions, divided into 14 levels (see Table4. 2), 5 job levels in each level, with a level difference of 50 yuan. At the same time, the corresponding job levels are corresponding to the years of service in the current position (see Table4. 1).

(3) Seniority salary: According to the regulations of Z Company, the salary will increase by 50 yuan for every year of seniority in Z Company, and the upper limit of the increase is 200 yuan (see Table4. 1).

(4) Special wages are composed of diversified subsidies, including national subsidies, holiday bonuses, certificate allowances and overtime pay. National subsidies are specifically divided into marine subsidies and river subsidies to reflect the company's attention to and compensation for differences in employees' working environments: marine subsidies are 50 yuan per day, and river subsidies are 25 yuan per day.

(5) Performance wages: Performance wages strictly follow the performance appraisal management method of Z Company. Employees who have full attendance every month will

receive a performance bonus of 3,600 yuan to recognize their hard work and outstanding contributions. It is worth noting that when the ship is at a standstill, the performance wage will be halved to reflect the direct impact of the company's operating conditions on employee income. During vacation, employees will not enjoy performance wages to ensure that performance rewards are truly linked to employees' actual work results.

Table4. 1Comparison of salary of employees in Company Z

Basic salary/RMB	Wage jobs						
	File Type	coefficient	Post Level				
			1	2	3	4	5
800	14	4.25	3400	3450	3500	3550	3600
800	13	4.00	3200	3250	3300	3350	3400
800	12	3.75	3000	3050	3100	3150	3200
700	11	3.50	2800	2850	2900	2950	3000
700	10	3.25	2600	2650	2700	2750	2800
700	9	3.00	2400	2450	2500	2550	2600
700	8	2.75	2200	2250	2300	2350	2400
700	7	2.50	2000	2050	2100	2150	2200
700	6	2.25	1800	1850	1900	1950	2000
700	5	2.00	1600	1650	1700	1750	1800
700	4	1.75	1400	1450	1500	1550	1600
700	3	1.50	1200	1250	1300	1350	1400
700	2	1.25	1000	1050	1100	1150	1200
700	1	1.00	800	850	900	950	1000

Source: Z Company Position Wage System Method (2021)

Table4. 2Z Company Position Classification

Level	Scope of application		
	The first type of work	Second category of work	Three types of work
14	Self-propelled vessel captain (also serving as ship manager)		
13	Captain (Self-propelled ship), Chief Engineer (Self-propelled ship), Ship Manager, Captain (1Class ships)		

12	captain(2Class ships), first mate (self-propelled ships),Engineer (sea-going self-propelled ship), Captain (Chief Engineer (Self-propelled river vessel of type I), Chief Engineer (Self-propelled inland river vessel of type I)		
11	captain(3Class ships)		
10	captain(4Class ships), Second Officer (Self-propelled ships), Second Engineer (Self-propelled ships)		
9	captain(5Class ships), deputy captain (1-2Class ships)		
8	captain(6Class ships), deputy captain (3-4Class ships), third officer (sea-going self-propelled ship), third engineer(Self-propelled ship at sea)		
7	Vice Captain (5-6Class ships), captain (non-self-propelled ships at sea), chief engineer (non-self-propelled ships at seaBoat)		
6	Gondola driver, on-duty mechanic, on-duty sailor, first mate (non-self-propelled ship at sea),Engineer (offshore nonSelf-propelled ship)		
5	Machinist, electrician, fitter, welder, concrete worker, second mate (non-self-propelled ship at sea), second engineer (seaNon-self-propelled ship on the sea), third officer (non-self-propelled ship at sea), third engineer (non-self-propelled ship at sea)		
4	sailor	car driver	
3			
2		Material EngineerPlanning, Procurement)	
1			Material worker, waiter, doorman

Source: Z Company Position Wage System Method (2021)

5. Diagnosis of the job satisfaction

5.1. Analysis of the questionnaire

5.1.1. Sample Characterization

This study collected a total of 150 valid questionnaires from offshore technicians of Company Z. The sample included seven variables, including Gender, Age, Educational level, Marital status, Position in Company Z, Years of experience working in Company Z, and Average annual income level in Company Z (including allowances, bonuses, etc.). The data obtained from the questionnaire survey was analyzed using SPSS27.0 data analysis software to obtain the distribution characteristics of offshore technicians of Company Z, as shown in Table5. 1

Table5. 1Frequency Analysis Table

Category	Item	Frequency	Percent	Valid Percent
Gender	Man	150	100	100
	Woman	0	0	0
Age	20-29 years old	12	8	8
	30-39 years old	28	18.7	18.7
	40-49 years old	23	15.3	15.3
	50-59 years old	87	58	58
	60 years old and above	0	0	0
Educational level	Junior college and below	118	78.7	78.7
	Undergraduate course	21	14	14
	Master	8	5.3	5.3
	Doctor	3	2	2
Marital status	Single	16	10.7	10.7
	Married/Living common-law	73	48.7	48.7

Position in Company Z	Divorced	57	38	38
	Widowed	4	2.7	2.7
	Captain	20	13.3	13.3
	Chief engineer	20	13.3	13.3
	Hanging machine operator	24	16	16
	Technician	27	18	18
	Management	23	15.3	15.3
	Other	36	24	24
	Less than a year	10	6.7	6.7
Years of experience working in Company Z	1-3 Years	23	15.3	15.3
	4-6 Years	2	1.3	1.3
	7-9 Years	21	14	14
	10 or more years	94	62.7	62.7
Average annual income level in Company Z (including allowances, bonuses, etc.)	50,000-100,000 yuan	12	8	8
	100,001-150,000 yuan	75	50	50
	150,001-200,000 yuan	23	15.3	15.3
	More than 200,000 yuan	40	26.7	26.7
	Total	150	100	100

Source: the author(2024)

As can be seen from the table above, all the offshore technicians of Company Z are male (100%), with ages mainly between 50 and 59 (58%), with education levels mainly college or

below (78.7%), and marital status mostly married or cohabiting (48.7%). The positions are relatively scattered, but technicians and managers account for a high proportion (18% and 15.3% respectively). In terms of work experience, more than 60% of the personnel have 10 years or more of work experience (62.7%), and the average annual income level is generally high, with more than half of the personnel having an annual income between 100,001 and 150,000 yuan (50%), and 26.7% of the personnel having an annual income of more than 200,000 yuan. These data provide a valuable reference for subsequent research by providing an in-depth understanding of the distribution of offshore technicians of Company Z.

5.1.2. Analysis of the job satisfaction

5.1.2.1. Analysis of the job satisfaction

Table5. 2 shows that this questionnaire survey covers the feedback of 150 employees of Company Z on multiple factors related to job satisfaction, including payment, promotion opportunities, supervision and management, welfare, performance rewards, operating procedures, relationships with colleagues, and the nature of work. The survey results show that employees are generally satisfied with various factors, which is specifically reflected in the fact that the average values of various factors are mostly between 4.26 and 4.44, showing that they have a relatively positive overall evaluation of various aspects of the company. Among them, performance rewards and the nature of work received the highest satisfaction scores, showing that employees recognize these two aspects. However, despite the high overall satisfaction, there are still some differences in the evaluations of different employees, especially in terms of welfare, which shows large individual differences. In addition, the standard deviation of overall satisfaction is relatively low, indicating that employees have relatively consistent views on the overall satisfaction of the company. Overall, this survey shows that the company has performed well in many aspects, but it still needs to pay attention to the differences between employees in order to further improve the working environment and improve the overall satisfaction of employees, thereby promoting the sustainable and stable development of the company.

Table5. 2Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
payment	150	1.50	6.00	4.2650	1.16515	1.358
Promotion	150	1.00	5.75	4.3083	1.15836	1.342
Supervision	150	1.50	6.00	4.3300	1.11327	1.239
Fringe Benefits	150	1.00	6.00	4.3217	1.19855	1.437

Contingent Rewards	150	1.50	6.00	4.4450	1.06021	1.124
Operating Procedures	150	1.00	6.00	4.3733	1.15231	1.328
Coworkers	150	2.00	6.00	4.3633	1.06247	1.129
Nature of Work	150	1.25	6.00	4.4333	1.06526	1.135
Communication	150	2.00	6.00	4.4133	1.02608	1.053
Total	150	2.92	5.97	4.3615	0.71240	0.508
Valid N (listwise)	150					

Source: the author(2024)

5.1.2.2. Reliability test

Reliability testing refers to the reliability, stability and consistency of questionnaire results, that is, whether the measurement results can reflect the true characteristics of the consistency and stability of the participants. The larger the reliability coefficient, the better the questionnaire survey results can reflect the true characteristics of the consistency and stability of the participants. Cronbach's α coefficient is one of the most commonly used reliability coefficients. It evaluates the consistency of the scores of each question in the questionnaire. It is an internal consistency reliability coefficient. k is the number of questions in the survey results, S_i^2 is the variance of the score of the i question, and S_T^2 is the variance of the total score.

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k S_i^2}{S_T^2} \right)$$

As can be seen from Table5. 3, the Cronbach's α coefficient of the total scale of the questionnaire is 0.916>0.7, which shows that the questionnaire has good consistency and stability. The question design and structure of the questionnaire are scientific and reasonable and can be used for further analysis

Table5. 3Reliability test

Dimension	Number of Items	Cronbach's Alpha	Total Cronbach's Alpha
payment	4	0.805	0.916
Promotion	4	0.800	
Supervision	4	0.787	
Fringe Benefits	4	0.822	
Contingent Rewards	4	0.785	
Operating Procedures	4	0.824	
Coworkers	4	0.763	

Nature of Work	4	0.768
Communication	4	0.769

Source: the author(2024)

5.1.3. Correlation analysis

Correlation analysis is a statistical analysis method that explores the closeness between different variables. In order to understand the strength of the correlation between variables, this study uses the Spearman analysis method to conduct a correlation analysis on the relationship between age, education, marital status, position, annual income, length of service and overall job satisfaction in basic information.

From the tableTable5. 4, we can see that:

Age :Age shows a low correlation with education level (Pearson Correlation = 0.062) but significant positive correlations with marital status (0.400), years of work (0.862), annual income (0.386), and overall satisfaction (0.333). This indicates that while age does not significantly influence education level, it positively impacts marital status, career longevity, income, and overall job satisfaction.

Education :Education level displays highly positive correlations with annual income (0.574) and overall satisfaction (0.530), but a significant negative correlation with position (-0.538). This suggests that education plays a crucial role in enhancing income and job satisfaction, yet certain positions may not require high educational attainment or may attract those with higher education seeking non-managerial roles. Additionally, education positively correlates with years of work (0.230), indicating its contribution to long-term career development.

Marital Status :Marital status exhibits significant positive correlations with years of work (0.358), annual income (0.260), and overall satisfaction (0.326**). This indicates that married individuals tend to have longer work histories, higher incomes, and higher job satisfaction evaluations.

Position :Position shows negative correlations with education level (-0.538), years of work (-0.251), overall satisfaction (-0.260), and annual income (-0.655). This may require further analysis into specific job requirements for education, experience, and income, as well as the impact of position hierarchy on job satisfaction.

Years of Work :Years of work significantly positively correlates with age (0.862), annual income (0.617), and overall satisfaction (0.380**). This underscores the typical pattern of increased income and job satisfaction accompanying longer career spans, consistent with aging.

Annual Income :Annual income displays highly positive correlations with education level (0.574), years of work (0.617), and overall satisfaction (0.489**). This emphasizes the combined influence of educational attainment and work experience on financial well-being, which in turn affects job satisfaction.

Overall Satisfaction :Overall satisfaction significantly positively correlates with age (0.333), education (0.530), marital status (0.326), years of work (0.380), and annual income (0.489**). This demonstrates that individual characteristics, educational background, work experience, and financial status collectively determine the level of job satisfaction.

Table5. 4Spearman analysis

		Age	Education	Marital status	Position	Years of work	Annual income	Overall satisfaction
Age	Pearson Correlation	1	.062	.400**	-.054	.862**	.386**	.333**
Education	Pearson Correlation	.062	1	.043	-.538**	.230**	.574**	.530**
Marital status	Pearson Correlation	.400**	.043	1	-.053	.358**	.260**	.326**
Position	Pearson Correlation	-.054	-.538**	-.053	1	-.251**	-.655**	-.260**
Years of work	Pearson Correlation	.862**	.230**	.358**	-.251**	1	.617**	.380**
Annual income	Pearson Correlation	.386**	.574**	.260**	-.655**	.617**	1	.489**
Overall satisfaction	Pearson Correlation	.333**	.530**	.326**	-.260**	.380**	.489**	1

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

Source: the author(2024)

5.1.4. One-way ANOVA

This study will use the One-Way ANOVA method to explore the relationship between job satisfaction and individual characteristics of Z Company's offshore workers. Since all Z Company's offshore workers are male, gender will not be included in the analysis. This study will focus on analyzing the impact of age, education, marital status, position, years of work, and annual income level on job satisfaction.

(1) ANOVA for different ages

From Table5. 5, it can be seen that there are significant differences in the job satisfaction of Z Company's offshore staff among different age groups, and the overall trend is to increase with age. Specifically, young employees are less satisfied with salary, promotion, supervision, benefits, contingent rewards, and operating procedures, while satisfaction in these aspects gradually increases with age and experience. At the same time, satisfaction with colleague relationships and the nature of work also increases with age, reflecting the close working relationship between employees and the in-depth understanding of the work content. Communication satisfaction is highest among employees aged 30-39, indicating that the communication methods and needs of employees in this age group may be more matched. The satisfaction levels of all evaluation dimensions are statistically significant ($p < 0.05$).

Table5. 5Analysis of variance table for different ages

	20-29 years old(n=12)	30-39 years old(n=28)	40-49 years old(n=23)	50-50 years old(n=87)	F	p
payment	3.06±0.98	4.32±1.07	4.58±1.21	4.33±1.12	5.352	0.002
Promotion	3.35±1.08	4.20±1.11	4.58±1.11	4.41±1.15	3.592	0.015
Supervision	3.60±1.01	4.26±1.13	4.74±0.90	4.34±1.14	2.884	0.038
Fringe Benefits	3.50±0.89	4.10±1.36	4.68±1.12	4.41±1.16	3.205	0.025
Contingent Rewards	3.44±0.91	4.47±0.86	4.79±0.95	4.48±1.10	4.83	0.003
Operating Procedures	3.10±1.04	4.36±1.15	4.49±1.28	4.52±1.04	5.963	<0.001
Coworkers	3.17±0.70	4.36±1.03	4.50±1.07	4.49±1.02	6.237	<0.001
Nature of Work	3.13±1.07	4.21±1.08	5.00±0.44	4.53±1.02	10.56	<0.001
Communication	3.10±0.68	4.46±0.85	4.39±1.17	4.58±0.96	8.432	<0.001
Total job satisfaction	3.27±0.58	4.30±0.60	4.64±0.63	4.46±0.65	13.97	<0.001

Source: the author(2024)

(2) Analysis of variance table for different ages

As shown in Table5. 6, in general, the higher the education level of employees, the higher their overall job satisfaction. Specifically, employees with a college degree or below have a relatively low satisfaction level (4.20 ± 0.62), while employees with a doctoral degree (5.84 ± 0.12) show the highest satisfaction. This trend is reflected in many aspects such as salary, promotion, benefits, supervision, variable compensation, operating procedures, colleague relationships, nature of work, and communication.

Taking salary as an example, the satisfaction score of employees with a college degree or below is about 4.10 points, while that of employees with a doctoral degree is as high as 5.83 points. Such a gap also exists in other aspects such as promotion and benefits, indicating that the level of education not only affects the salary level of employees, but also

profoundly affects their feelings in many aspects such as career development, work environment, and interpersonal relationships.

In addition, from the perspective of each evaluation dimension, the satisfaction levels of Payment, Promotion, Supervision, Fringe Benefits, Contingent Rewards, Operating Procedures, Coworkers, Nature of Work, and Communication are all statistically significant ($p < 0.01$).

Table5. 6Analysis of variance table for different education levels

	Junior college and below(n=118)	Undergraduat e course(n=21)	Master (n=8)	Doctor (n=3)	F	p
payment	4.10±1.11	4.44±1.24	5.63±0.13	5.83±0.14	7.168	<0.001
Promotion	4.14±1.14	4.52±1.08	5.63±0.13	5.75±0.00	6.722	<0.001
Supervision	4.18±1.10	4.52±1.05	5.53±0.09	5.83±0.14	6.554	<0.001
Fringe Benefits	4.12±1.19	4.73±0.95	5.63±0.13	5.92±0.14	7.755	<0.001
Contingent Rewards	4.34±0.97	4.38±1.38	5.66±0.13	5.92±0.14	6.488	<0.001
Operating Procedures	4.24±1.10	4.44±1.33	5.66±0.13	5.83±0.14	6.039	<0.001
Coworkers	4.23±1.03	4.42±1.09	5.59±0.13	5.83±0.14	6.814	<0.001
Nature of Work	4.22±1.08	5.00±0.47	5.59±0.13	5.83±0.14	10.02	<0.001
Communication	4.28±1.00	4.51±0.96	5.66±0.13	5.83±0.14	7.462	<0.001
Total job satisfaction	4.20±0.62	4.55±0.65	5.62±0.11	5.84±0.12	21.1	<0.001

Source: the author(2024)

(3) Analysis of variance by marital status

From Table5. 7, it can be seen that there are significant differences in the job satisfaction of Z Company's offshore staff with different marital status. Married/cohabiting and divorced employees are more satisfied with salary, promotion opportunities, supervision and management, contingent rewards, operating procedures, relationships with colleagues, nature of work and communication than single employees, indicating that stable family relationships may enhance employees' acceptance and satisfaction with these work aspects. Widowed employees also show high satisfaction in most dimensions, which may be due to their cherishment of their current jobs and a deeper understanding of their work. It is worth noting that there is little difference in satisfaction with welfare benefits among employees with different marital status, indicating that Z Company's welfare policy is generally recognized. Except for welfare benefits, the satisfaction levels of other evaluation dimensions are statistically significant ($p < 0.05$).

Table5. 7Analysis of variance by marital status

	Single (n=16)	Married / Living common-law(n= 73)	Divorced (n=57)	Widowed (n=4)	F	p
payment	3.22±1.20	4.36±1.11	4.49±1.05	3.50±1.54	6.355	<0.001
Promotion	3.47±1.21	4.37±1.10	4.46±1.14	4.38±1.36	3.343	0.021
Supervision	3.73±1.19	4.30±1.13	4.58±1.00	3.75±1.40	2.972	0.034
Fringe Benefits	3.77±1.05	4.43±1.14	4.36±1.26	3.94±1.70	1.538	0.207
Contingent Rewards	3.69±1.04	4.48±1.08	4.60±0.99	4.63±0.85	3.329	0.021
Operating Procedures	3.41±1.30	4.34±1.18	4.65±0.96	4.81±0.66	5.558	0.001
Coworkers	3.44±0.96	4.50±0.95	4.45±1.10	4.25±1.37	4.991	0.003
Nature of Work	3.39±1.27	4.50±1.00	4.59±0.95	5.19±0.38	7.052	<0.001
Communication	3.48±0.96	4.35±1.08	4.70±0.82	5.19±0.52	7.551	<0.001
Total job satisfaction	3.51±0.77	4.41±0.61	4.54±0.66	4.40±0.92	10.65	<0.001

Source: the author(2024)

(4) Analysis of variance for different positions

Table5. 8 shows that there are significant differences in job satisfaction among different positions of Z Company's offshore staff. Chief engineers are generally more satisfied with salary, promotion opportunities, supervision, welfare benefits, operating procedures, nature of work and communication, while technicians are relatively less satisfied with these dimensions. Captains are also more satisfied with contingent rewards and nature of work. Managers are most satisfied with coworker relationships, but the overall difference between different positions in this dimension is not significant. These differences may reflect the differences in work content, responsibilities, treatment and working environment among different positions. Based on these analysis results, the company can formulate corresponding management and incentive measures to improve employees' job satisfaction and overall work performance.

Table5. 8Analysis of variance for different positions

	Captain (n=20)	Chief engineer (n=20)	Hanging machine operator (n=24)	Technician (n=27)	Managem ent(n=23)	Other (n=36)	F	p
payment	4.59±1.13	4.86±1.20	4.11±1.11	3.91±1.12	4.39±0.97	4.04±1.24	2.37	0.042

Promotion	4.39±1.35	5.13±0.70	4.20±1.19	3.90±1.10	4.32±1.13	4.19±1.13	2.994	0.013
Supervision	4.66±1.04	4.95±1.00	4.06±1.10	3.91±1.23	4.16±1.15	4.40±0.95	2.971	0.014
Fringe Benefits	4.61±1.17	5.18±0.75	4.06±1.26	3.50±1.41	4.41±0.98	4.42±0.95	5.943	<0.001
Contingent Rewards	4.94±0.63	4.81±1.38	4.30±1.01	4.22±1.01	4.43±0.99	4.24±1.09	2.016	0.08
Operating Procedures	4.43±1.36	5.19±0.65	4.17±1.15	4.21±1.09	4.40±1.13	4.13±1.18	2.733	0.022
Coworkers	4.68±0.85	4.74±1.28	4.19±1.15	4.01±1.03	4.59±0.80	4.22±1.08	1.964	0.088
Nature of Work	4.96±0.50	5.14±0.90	4.31±1.01	3.92±1.17	4.35±1.02	4.27±1.11	4.809	<0.001
Communication	4.63±1.09	5.05±0.88	4.41±0.82	4.17±1.05	4.14±1.05	4.31±1.05	2.552	0.03
Total job satisfaction	4.65±0.65	5.00±0.74	4.20±0.69	3.97±0.59	4.36±0.48	4.25±0.69	7.225	<0.001

Source: the author(2024)

(5) Variance analysis of different length of service

From Table5. 9, it can be seen that there are significant differences in the job satisfaction of Z Company's offshore staff at different time periods. Employees who have worked for 10 years or more are most satisfied with their salary, benefits, operating procedures, relationships with colleagues, nature of work and communication, while employees who have worked for less than one year are least satisfied with these dimensions. Although there is no significant difference in employee satisfaction with promotion opportunities and reward mechanisms in different time periods, there is an overall trend of increasing satisfaction with increasing working time. This may reflect that as employees accumulate work experience, they become more adaptable to the work environment and content, and the company invests more in and pays more attention to long-term employees. Based on these results, the company can consider how to better support new employees, help them integrate into the work environment more quickly, and improve satisfaction and retention rates.

Table5. 9Variance analysis table for different length of service

	Less than a year (n=10)	1-3 Years (n=23)	4-6 Years (n=2)	7-9 Years (n=21)	10 or more years (n=94)	F	p
payment	3.13±1.16	4.03±1.17	4.75±0.35	4.30±0.97	4.43±1.15	3.359	0.012
Promotion	3.70±0.99	3.93±1.25	5.13±0.18	4.42±0.89	4.42±1.19	1.853	0.122

Supervision	3.63±0.99	4.25±1.09	3.38±2.30	4.13±1.08	4.49±1.09	2.111	0.082
Fringe Benefits	3.65±1.07	3.88±1.37	3.63±2.30	4.38±1.13	4.50±1.13	2.366	0.056
Contingent Rewards	3.88±0.91	4.21±1.05	3.88±1.94	4.76±0.41	4.51±1.14	1.737	0.145
Operating Procedures	3.25±1.23	4.07±1.30	5.00±0.00	4.25±1.05	4.58±1.06	4.081	0.004
Coworkers	3.40±0.99	3.99±1.12	5.00±0.35	4.21±1.10	4.58±0.98	4.364	0.002
Nature of Work	3.40±1.04	4.04±1.22	5.00±0.35	4.13±1.10	4.69±0.92	5.745	<0.001
Communication	3.38±0.94	4.29±0.95	5.00±0.35	4.18±0.93	4.59±1.02	4.116	0.003
Total job satisfaction	3.49±0.86	4.08±0.69	4.53±0.82	4.31±0.47	4.53±0.66	7.068	<0.001

Source: the author(2024)

(6) Variance analysis of different annual income

From Table5. 10, it can be seen that there are extremely significant differences in the job satisfaction of Z Company's offshore staff in different annual income ranges. Employees with an annual income of more than 200,000 yuan are most satisfied with salary, promotion opportunities, supervision and management, welfare benefits, reward mechanisms, operating procedures, colleague relationships, nature of work and communication, while employees with an annual income of 50,000-100,000 yuan are least satisfied with these dimensions. This shows that with the increase in annual income, employees show a significant upward trend in multiple dimensions of job satisfaction. High-income employees may show higher job satisfaction because they have obtained better salary benefits, promotion opportunities and working environment. The company can consider motivating employees through a reasonable salary structure and welfare benefits to improve work efficiency and satisfaction, while paying attention to the needs of low-income employees to improve their overall work experience and satisfaction.

Table5. 10Variance analysis table for different annual income

	50,000-100,000 yuan (n=12)	100,001- 150,000 yuan (n=75)	150,001-200,000 yuan (n=23)	More than 200,000 yuan(n=40)	F	p
payment	3.06±0.98	4.17±1.11	4.39±0.97	4.73±1.16	7.437	<0.001
Promotion	3.35±1.08	4.22±1.10	4.32±1.13	4.76±1.12	5.271	0.002
Supervision	3.60±1.01	4.24±1.09	4.16±1.15	4.81±1.02	4.807	0.003
Fringe Benefits	3.50±0.89	4.12±1.27	4.41±0.98	4.89±1.01	6.272	<0.001

Contingent Rewards	3.44±0.91	4.38±0.99	4.43±0.99	4.88±1.06	6.561	<0.001
Operating Procedures	3.10±1.04	4.34±1.05	4.40±1.13	4.81±1.12	7.673	<0.001
Coworkers	3.17±0.70	4.30±1.04	4.59±0.80	4.71±1.07	7.829	<0.001
Nature of Work	3.13±1.07	4.34±1.02	4.35±1.02	5.05±0.72	13.432	<0.001
Communication	3.10±0.68	4.48±0.89	4.14±1.05	4.84±1.00	11.412	<0.001
Total job satisfaction	3.27±0.58	4.29±0.57	4.36±0.48	4.83±0.71	21.723	<0.001

Source: the author(2024)

5.1.5. Summarize

This study collected sample data from 150 offshore technicians of Company Z through questionnaires, and used SPSS 27.0 software to analyze the data. The study found that all interviewees were male, mainly aged 50-59, with mostly college education and below. Most were married or living together. Their positions were widely distributed, but technicians and managers accounted for a high proportion. In terms of work experience, more than 60% of employees have more than 10 years of service, and the average annual income is generally high, mainly between 100,000 and 1.5 million yuan. Employees are generally highly satisfied with salary, promotion opportunities, supervision and management, benefits, performance rewards, work procedures, colleague relationships and nature of work, but they vary by age, education level, marital status, position, work experience and annual income. There are significant differences in employee satisfaction levels. Through analysis of variance (ANOVA), it was found that with the increase of age, education level, work experience and annual income, the overall employee satisfaction is on the rise. The study recommends that companies develop personalized incentives for employee groups with different characteristics to further enhance employee job satisfaction and overall performance.

5.2. Analysis of the interviews

5.2.1. Purpose of the interview

This employee job satisfaction interview aims to understand employees' views and opinions on the company's current situation, as well as their expectations and suggestions for the company's future development. In the early stage, the questionnaire survey collected explicit problems that may affect employees' job satisfaction. Combining the problems with the company's actual situation, combined with past work experience and informal interviews, interview outlines were designed for people of different job levels. By summarizing the interview records, the real situation that affects employees' job satisfaction was further analyzed, effective solutions were proposed for the problems, and more accurate problem diagnosis was provided to improve employees' job satisfaction and promote the company's development.

5.2.2. Interview Design and Sample Characteristics

(1) Interview subjects and methods

The interview subjects were mainly grassroots employees, totaling 8 people, including 5 front-line technical employees (including 2 resigned employees) and 5 front-line managers. The interviews were conducted in formal/informal ways during business trips and breaks. The interviews were conducted face-to-face and by telephone (see Table5. 11). The author recorded the content. The interview time for each interviewee was about 35 minutes. Before the interview, notebooks, paper, pens, and notepads were prepared in advance, and the interview time was agreed upon. During the interview, the purpose and use of the interview were informed, and the interviewee's personal information and the specific content of the interview were promised not to be disclosed, and the interviewee's concerns were minimized as much as possible.

Table5. 11Interview implementation details table

Respondent's position	Respondents' Position	Interview method and location	Interview time
Ship Manager	Management	A question-and-answer interview was conducted in the conference room on the 3rd floor of Z Company's headquarters.	Date: August 16,2024 Time: 10:00am to 11:00am
Ship Manager	Management	Pingtang Project Department Meeting Room, Question and Answer Interview	Date: August 20,2024 Time: 9:30am to 10:00am
Chief Engineer	Management	Pingtang Project Department Meeting Room, Question and Answer Interview	Date: August 20, 2024 Time: 10:00am to 10:30am
Machinist	Frontline technical staff	Pingtang Project Department Meeting Room, Question and Answer Interview	Date: August 20,2024 Time: 10:30am to 11:00am
Crane operator	Frontline technical staff	Pingtang Project Department Meeting Room, Question and Answer Interview	Date: August 20,2024 Time: 11:00am to 11:30am
Mixer Operator	Frontline technical staff	A question-and-answer interview was conducted in the conference room on the 3rd floor of Z Company's headquarters.	Date: August 16,2024 Time: 11:30am to 12:00pm
sailor	Resigned employees	Telephone interview	Date: August 16,2024 Time: 12:00 am to

			13:00 pm
Machinist	Resigned employees	Telephone interview	Date: August 16,2024
			Time: 13:00 to 14:00
Source: the author(2024)			

(2) Interview outline design

Based on the type of interviewees, three survey outlines were designed for frontline technical staff, management staff, and resigned staff (see Table5. 12). Questions were designed in terms of job satisfaction, work environment, salary and benefits, career development and training, team division and management, etc. The order of questions was set from easy to difficult, and the description of questions was open, which promoted the interviewees to participate in the interview process more seriously, and helped us to find the root causes that affect employees' job satisfaction more accurately.

Table5. 12Interview outline

Frontline Management Interview Questions	
Job satisfaction	What is your opinion on the overall job satisfaction of current frontline employees?
	What successful measures or shortcomings do you think the company has taken to improve the job satisfaction of front-line employees?
Work environment and stress	What are the working environment and conditions for frontline employees like? Are there areas that need improvement?
	How to balance work pressure and rest for frontline employees to ensure their physical and mental health?
Salary and Benefits	Can the current salary and benefits system provided by the company effectively motivate front-line employees?
	What areas do you think can be improved in terms of compensation and benefits?
Career Development and Training	Does the company provide adequate career development opportunities and training resources for front-line employees?
	How to ensure that front-line employees continue to progress in their careers and avoid burnout?
Team atmosphere and management	What is the atmosphere like on the front line? Are there any miscommunications or barriers to collaboration?
	As a leader, what steps have you taken to enhance team cohesion and collaboration efficiency?
Interview questions for frontline employees	
Job Satisfaction	Are you satisfied with your current job? Please talk about what you are

	satisfied with and what you are not satisfied with.
	What company measures or benefits make you feel particularly satisfied or grateful?
Salary and Benefits	Do you think the company's salary and benefits system is fair and reasonable? What aspects need to be improved?
	How much impact do compensation and benefits have on your work motivation and loyalty?
Work environment and stress	What is your work environment like? Is there anything that needs improvement?
	Is your job stressful? Does the company provide adequate support and resources to help you cope with stress?
Career Development	Are you satisfied with the company's career development opportunities and training programs?
	What goals do you hope to achieve in your future career? Does the company provide the corresponding support and opportunities?
Team atmosphere and management	What is the atmosphere of your team like? Do leaders and management provide enough attention and support?
	Where do you think the company can improve in terms of teamwork and communication?
Interview questions for former employees	
Reason for leaving	What was the main reason for your decision to leave?
	What factors in the company or work environment have caused you dissatisfaction or disappointment?
Job Satisfaction	During your employment, are you satisfied with the company's salary and benefits, working environment, career development, etc.?
	What specific experiences or events have impacted your job satisfaction?
Improvement	In what areas do you think the company can improve to attract and retain more talented employees like you?
Suggestions	Do you have any specific suggestions or expectations for the company's future development?

Source: the author(2024)

5.2.3. Interview analysis

All the interviews were summarized and sorted according to the five dimensions of the questionnaire survey and the feedback from the former employees, and the summary is as follows:

5.2.3.1. Job Satisfaction

Through the interviews, the different feedbacks from management and grassroots employees on job satisfaction are analyzed as follows:

Feedback from interviewed management satisfaction: Management is generally satisfied with the smooth progress of work and the absence of accidents. However, they also expressed dissatisfaction at certain critical moments, mainly focusing on human resource allocation. When the workload surges, management often feels short of manpower, and the company's response speed to transfer personnel cannot meet the actual needs, resulting in urgent work progress. In addition, management also expressed concerns that employees may ignore safety issues when they are busy, believing that this increases the risk of safety accidents, and management will bear major responsibilities once an accident occurs.

Feedback from interviewed employees satisfaction: The interviewed employees are generally less satisfied with their work, and the main reasons are concentrated in the following aspects: First, they reflect that leaders often only verbally direct work, but do not actually participate in labor, resulting in almost all dirty and tiring work falling on the shoulders of grassroots employees. Second, the special nature of work on board makes work and rest extremely irregular, and employees need to be ready to deal with emergencies such as equipment failures at any time, which often makes them feel exhausted. Third, during large engineering projects, there is a serious shortage of personnel, and employees have to work continuously for a long time, or even in two shifts, which puts a lot of pressure on their physical and mental health. In addition, the lower-level employees also complained about the existence of nepotism within the company, which made them feel unfair and believed that they had to bear more workload.

However, the interviewed employees also expressed satisfaction with certain aspects, such as the sufficient holidays and relatively stable salary income every year. They believe that although the salary for working on board is lower than the industry level, they are willing to continue working on board because of the higher stability and the salary still has certain advantages compared with working on shore. However, if the salary on shore is the same as that on board, many of them may choose to leave the ship.

In summary, there are differences in job satisfaction between management and lower-level employees, which mainly stem from their different feelings about workload, leadership support, working environment and remuneration. In order to improve overall job satisfaction, the company needs to conduct in-depth analysis and improvement on these aspects.

5.2.3.2. Salary and compensation

After in-depth understanding through interviews, it was found that there were significant differences between management and lower-level employees in terms of salary and compensation, especially performance distribution. Management emphasized that performance distribution is mainly determined by ship managers based on the employees' work efforts, intending to motivate those employees with outstanding performance in this way. However, due to the total amount of performance that can be allocated to each ship each month, even for the most hardworking employees, the extent of their incentives is relatively limited.

The interviewed employees generally reflected that they felt unfair in the performance distribution. They believed that they and their colleagues had the same workload, with no obvious distinction between easy and heavy work, but the results of the performance distribution seemed to be more inclined to those close to the ship manager, and this impression made them dissatisfied and disappointed. This unbalanced perception led to some grassroots employees taking a negative work attitude, the so-called "tank" phenomenon, and they were no longer willing to take on more tasks or pursue outstanding performance.

In addition, the interviewed employees also mentioned that although the salary at sea seemed more considerable than some jobs on shore, there was still a certain gap compared with the average level of the actual industry. This understanding made them feel that their labor value was not fully recognized, which in turn affected their work enthusiasm and long-term planning for career development.

In summary, the differences in the perception of performance distribution between management and grassroots employees, as well as the relative dissatisfaction of grassroots employees with salary levels, are important challenges facing the current internal management of enterprises. To ease this contradiction, it is recommended that management adopt a more transparent and fair performance evaluation system to ensure that every employee's efforts can be reasonably rewarded. At the same time, it is also necessary to pay attention to and strive to improve the overall salary level to attract and retain talents and promote the sustainable and healthy development of the company.

5.2.3.3. Working environment and pressure

Through in-depth interviews, the significant differences between management and grassroots employees in the ship's working environment and pressure perception and the reasons behind them were revealed. Management pointed out that the ship's working environment

brings unique challenges due to its closedness and diversity. Some modern ships are equipped with facilities such as gyms and entertainment rooms, which effectively alleviate the monotony of employees' daily work. To this end, management has taken positive measures, such as strengthening communication with employees and arranging employees' shore activities in a timely manner to reduce work pressure.

However, the grassroots employees interviewed reflected more complex and urgent problems. They emphasized that the environment between different ships is significantly different, and the opportunities to transfer to ships with better conditions are extremely limited. They are often limited by internal relationship networks, which makes most employees work in a relatively depressing environment for a long time. In addition, as ships go deep into the sea far away from land, the procurement of daily necessities has become a major problem. For cost control reasons, the company reduced the frequency of material transportation, resulting in food being stored on board for too long, which greatly reduced its freshness and affected the quality of life of employees. When materials are in short supply, employees can only endure the inconvenience and wait for the next supply, and face the risk of losing their belongings, which further exacerbates the uncertainty of life.

More importantly, communication problems on ships are also a major threat to employees' mental health. Frequent communication interruptions make it difficult for employees to keep in touch with their families, and long-term emotional isolation deepens the gap with their families. This psychological loneliness and helplessness, superimposed on the poor working environment, greatly increases the physical and mental pressure of employees.

In summary, although the management has taken certain measures to cope with work pressure, many practical difficulties faced by grassroots employees, such as environmental differences, material procurement difficulties and communication barriers, still need to be more comprehensively and deeply concerned and resolved to ensure the physical and mental health and work efficiency of employees.

5.2.3.4. Career development and training

After in-depth interviews with management and grassroots employees, the feedback on career development and training mechanisms showed significant differences and commonalities. The management emphasized that although the company does not often organize large-scale unified training, it focuses on personalized and targeted training through the "mentor-apprentice system". Each new crew member can learn across positions under the guidance of the master, aiming to promote their all-round development and the possibility of future job promotion. At the same time, a bonus incentive mechanism is established to encourage the master's careful teaching.

However, the perspective of grassroots employees reflects different experiences. They believe that the company's training management is scattered and disorderly, lacking systematic professional skills training. Although frequent job transfers are named "all-round development", they actually affect the in-depth mastery of professional skills, resulting in employees' skills being more broad than deep. In addition, employees are required to bear the cost and time of obtaining certificates by themselves. The company only provides limited support in the registration process, which undoubtedly increases the economic burden and learning pressure of employees. As for the promotion path, employees generally feel that the promotion threshold is high, opportunities are scarce, and they often tend to favor internal children, which limits the career development space of ordinary employees and makes their career prospects bleak.

In summary, there are obvious differences in the perception of career development and training between management and grassroots employees. Management focuses on flexible and diverse training methods and incentive mechanisms, while grassroots employees hope to see more systematic and professional training support and fair and transparent promotion channels. Therefore, in the future, companies should consider how to balance these two needs, improve the training system, improve employees' professional skills, and build a more open and fair promotion mechanism to promote the long-term development of employees and the continued prosperity of the company.

5.2.3.5. Team atmosphere and management

The management's evaluation of the team management atmosphere is quite positive. They emphasize that a relatively harmonious working atmosphere has been created on board, especially during important festivals, when team activities are organized to enhance mutual understanding and friendship among employees. Regarding the occasional phenomenon of employees not getting along with each other, the management said that they would be sensitive to and pay attention to the psychological state of these employees, and provide necessary psychological support and counseling in a timely manner, which reflects the management's high attention to employee welfare.

However, from the perspective of grassroots employees, although employees in each department get along harmoniously and form their own small circles, due to the obvious differences in working hours, there are fewer opportunities for cross-departmental employee exchanges, which to a certain extent limits the improvement of the overall cohesion of the team. In addition, employees generally reflect that the path of job promotion is relatively concentrated and mainly determined by the ship manager, which may cause some non-core

circle members to face certain obstacles in promotion, affecting their work enthusiasm and sense of belonging.

In summary, the team performed well in promoting internal harmony and organizing activities, but the lack of cross-departmental communication and the transparency of the promotion mechanism have become the focus of employees' attention. In the future, we can consider strengthening the mechanism of cross-departmental cooperation and communication, while improving the promotion process to ensure greater fairness and transparency, so as to promote a win-win situation for the overall cohesion of the team and the personal development of employees.

5.2.3.6. Feedback from resigned employees

Based on the feedback from resigned employees, we deeply understand the important role of family factors in career choices. Specifically, the experiences of two resigned employees are quite representative. The first employee frequently left home due to work needs, which led to a significant reduction in the time spent with his wife and children, and a gap in family relationships. In order to repair this situation, he chose to find a new job in his hometown. Although the salary level was relatively adjusted, being able to participate more in family life became his priority.

The situation of another employee is closely related to marital pressure. Faced with the pressure of family urging marriage, he found a partner, but his girlfriend strongly opposed the nature of his work at sea, believing that this working model was not conducive to the maintenance of their relationship. In the end, in order to maintain the relationship, he chose to leave Company Z and look for a job opportunity that could better balance personal life and partner needs.

These two resignation cases reflect a problem: working in Company Z, employees generally face the challenge of balancing work and family. Long-term separation not only affects the emotional communication between individuals and family members, but also increases the difficulty of finding a partner or maintaining a marriage. Many employees reported that the widespread phenomenon of "late marriage" within the company is partly due to this imbalance between work and life.

In addition, employees also expressed dissatisfaction with career development. They believe that the promotion path in Z Company is unclear, and the relative isolation of the working environment also exacerbates the limitations of career development. Although the salary level is better than general shore work, it is still insufficient compared with other opportunities in the industry and it is difficult to fully meet the expectations of employees.

In summary, Z Company needs to think deeply about how to improve the work-life balance of employees while maintaining business operations, strengthen career development planning, and adjust compensation strategies to better attract and retain talents. By improving the working environment, providing more family support measures, clarifying the promotion path and improving the overall salary competitiveness, it may be possible to effectively alleviate the problem of resignation caused by family factors and promote the long-term and stable development of the company.

5.2.4. Analysis and Summary

Through multi-dimensional interviews, we deeply explored various factors that affect employee job satisfaction, including whether the distribution of salary and benefits is fair, whether the working environment is comfortable, and whether the career development path is clear. It was found that there are significant differences between management and grassroots employees in these aspects. Grassroots employees generally feel that their job satisfaction is low, which is mainly attributed to the perceived unfairness of salary and benefits, high work pressure, and unclear career development opportunities. In response to these problems, specific improvement measures such as increasing salary competitiveness, improving the working environment, strengthening systematic vocational training, and establishing a transparent and fair promotion mechanism were proposed. At the same time, through SWOT analysis, the company's advantages in technical strength and market recognition were clarified, and disadvantages such as low salary levels and imperfect welfare mechanisms were pointed out, as well as opportunities such as industry growth and technological innovation and threats such as intensified market competition and talent loss, providing a comprehensive reference for the company's future strategic planning.

5.3. Two-factor theory analysis

After detailed data analysis, Z Company is currently facing the challenge of an aging employee structure. In particular, the job satisfaction of young employees with low education is significantly lower, which directly points to the high risk of turnover of young staff. The in-depth insights of the interview analysis further reveal the actual plight of grassroots employees. Combining the comprehensive information of the questionnaire survey and the interview, we will use Herzberg's two-factor theory framework (i.e., hygiene factors and motivational factors) to conduct a more detailed analysis of the job satisfaction issues of Z Company's offshore technicians, aiming to explore the root causes and propose targeted improvement strategies.

5.3.1. Health Factors

(1) Working conditions and environment: Data analysis shows that employees generally reflect that the working environment and conditions need to be improved, such as irregular work and rest, long hours of continuous work, large environmental differences, and difficulty in purchasing materials. The interviews also mentioned the psychological and emotional pressure caused to employees by the closed working environment on board, the difficulty of purchasing materials, and the interruption of communication with family members.

Salary and benefits: Through the interview, we learned that although the salary of Z company employees is higher than that of shore wages, some employees think that the salary is lower than the industry average. At the same time, through the official website of the China Maritime Safety Administration, we found that the salary of Z company's front-line grassroots employees is indeed lower than the average of the industry. It is understood that the current salary of Z company's sailors and mechanics is about 7,800 yuan (see Table4. 1), while the current salary of sailors and mechanics in the industry is 1,564 US dollars (see Table5. 13), which is about 11,200 yuan in RMB. Compared with the industry average salary, Z company is about 3,000 yuan less. Although Z company has some other welfare benefits, it cannot change the fact that Z company's income is far below the industry average. At the same time, the unfairness of the performance distribution mechanism also leads to employees' dissatisfaction with the salary and welfare system.

Table5. 13China (Shanghai) International Seafarers Salary

China (Shanghai) International Seafarers Salary				
Salary in US dollars				
Position	container ship	Dry Bulk Cargo Ship	Tanker	Chemical tanker
captain	9713	9430	11875	10383
First Mate	7883	7406	9091	8353
Second Mate	4839	4482	5136	4982
Third mate	4500	4189	4789	4682
Chief Engineer	9385	9056	11167	9704
Second Engineer	7872	7403	9107	8273
Second Pipe	4839	4477	5136	4954

Electrician	4915	4466	5298	4898
Three-pilot	4478	4186	4806	4696
Boatswain	2227	2040	2649	2496
Chief Engineer	2227	2037	2649	2496
sailor	1794	1564	1911	1880
Machinist	1794	1564	1911	1880
Chef	2192	2001	2387	2174
Waiter	1049	724	1103	1025

Source: China Maritime Safety Administration official website

(3) Supervision and Management: In Company Z, there are significant differences between management and lower-level employees in terms of supervision and management. Lower-level employees generally reflect that leadership support is insufficient and that the supervision method needs to be improved, which affects their work motivation and satisfaction. In order to improve this situation, the company should strengthen the actual participation and support of leaders, improve the fairness and transparency of supervision methods, strengthen communication between management and employees, and encourage employees to participate in the management and supervision process to enhance overall job satisfaction and team cohesion.

5.3.2. Motivational factors

(1) Career and development training: In Company Z, there are significant problems with the career development and training mechanism, and there are obvious differences in feedback between management and grassroots employees in this regard. Management emphasizes personalized training through the "mentor-apprentice system" and establishes a bonus incentive mechanism to promote employee career development. However, grassroots employees generally reflect that the company's training system is scattered and disordered, lacks systematicity, and frequent job transfers affect the in-depth mastery of professional skills. In addition, the cost and time of obtaining certificates by themselves increase economic and learning pressure. In addition, employees feel that the promotion threshold is high and opportunities are scarce. Promotions often tend to favor internal children, resulting in bleak career prospects.

(2) Work achievement and recognition: In Company Z, there are also urgent problems in work achievement and recognition. Management may tend to focus on the overall work progress and results, but pay less attention to the sense of achievement and recognition of

grassroots employees in specific work. Grassroots employees generally reflect that although they have made great efforts in the harsh offshore working environment, they often do not receive sufficient recognition and praise, which greatly reduces their sense of work achievement.

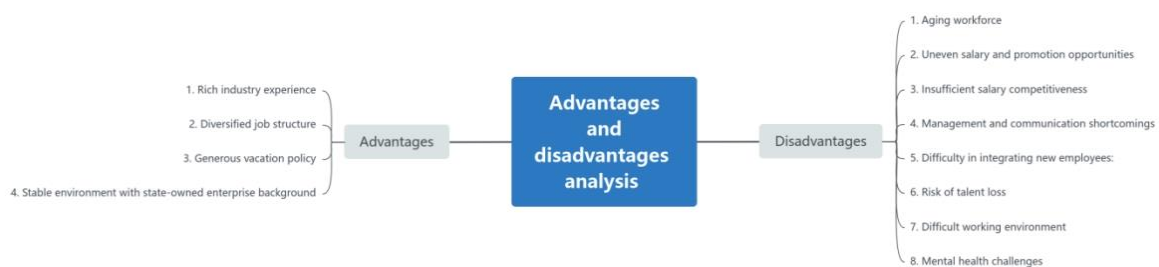
5.3.3. Summary

Z Company is currently facing the situation of low job satisfaction among young and low-educated employees, which shows that the retention rate of this part of employees in Z Company is not high. At the same time, through the Herzberg two-factor theory analysis, it is found that the main reasons are poor working environment, salary and benefits below the industry average, insufficient supervision and management, scattered career development training and lack of work achievement. It is recommended to improve working conditions, increase salaries, strengthen leadership support, establish a systematic training system and enhance recognition of employee achievements in order to improve employee satisfaction, reduce turnover rate and promote the long-term development of the company.

5.4. Advantages and disadvantages analysis

Based on an in-depth analysis of the employee questionnaire and in-depth interview results of Company Z, we have comprehensively sorted out and summarized the strengths and weaknesses of Company Z with the goal of improving employee satisfaction (see Figure5. 1). Through detailed data analysis and in-depth insights, we aim to provide the company with practical improvement suggestions in order to further promote the improvement of employee satisfaction and promote the sustainable development of the company in the future.

Figure5. 1Advantages and disadvantages analysis chart



Source: the author(2024)

5.4.1. Advantages

(1) Rich industry experience: Company Z has an experienced workforce, with more than 60% of employees working in the company for more than ten years. This long-term industry precipitation gives employees significant advantages in handling complex problems and providing stable and reliable services. Their experience not only helps solve current problems but also enables them to quickly adapt and find effective solutions when faced with new challenges.

(2) Diversified job structure: Company Z provides a variety of job options, including captain, chief engineer, technician, manager, etc. This diverse position structure allows the company to flexibly respond to various business needs while promoting cooperation and communication between different departments. Employees can choose suitable positions based on their interests and professional background, which helps achieve a win-win situation for personal career development and company goals.

(3) Generous leave policy: The company provides employees with up to 120 days of paid leave per year, which provides employees with sufficient time to rest, relax and reunite with their families. A generous vacation policy not only reflects the company's concern for the physical and mental health of its employees, but also helps improve employee job satisfaction and loyalty. Employees can recharge their batteries during vacation and return to work in a better condition.

(4) Stable environment with a state-owned enterprise background: As a state-owned enterprise, Company Z enjoys relatively stable policy support and market position. Employees in state-owned enterprises tend to face lower risks of unemployment than those in private enterprises. This stability not only enhances employees' job security, but also helps attract more job seekers seeking stable jobs to join the company. At the same time, the state-owned enterprise background also provides strong support for the company's competition in the industry.

5.4.2. Disadvantages

(1) Aging workforce: Although the older employees are rich in experience, the aging problem of Company Z's workforce has become increasingly prominent. More than 58% of employees are aged 50-59, meaning companies face challenges attracting and retaining young talent. Aging may cause a company to be limited in its ability to innovate and quickly adapt to new technologies, which is not conducive to the company's long-term development.

(2) Uneven salary and promotion opportunities: Although the overall salary level is relatively high, there are significant differences in salary and promotion opportunities among

employees in different positions and age groups. This imbalance may cause dissatisfaction among employees and affect the stability and work enthusiasm of the team. In order to enhance employees' sense of fairness and belonging, the company needs to improve the salary structure and promotion mechanism to ensure that every employee can receive reasonable rewards and development opportunities.

(3) Salary is not competitive enough: lower level within the industry. As market competition intensifies and talent mobility increases, companies need to improve salary competitiveness to attract and retain top talent. Otherwise, excellent talents may flow to companies with higher salaries and better development prospects.

(4) Shortcomings in communication: Company Z still has certain deficiencies in internal management and cross-department communication. This can lead to problems such as poor workflow and delayed delivery of information. In order to improve work efficiency and teamwork capabilities, the company needs to strengthen the construction of internal management and communication mechanisms to ensure smooth collaboration and cooperation between various departments.

(5) Difficulties in integrating new employees: The questionnaire survey shows that employees with shorter working years have lower scores on various satisfaction indicators. This shows that companies still need to work hard to help new employees integrate into the company culture and work environment. New employees are the company's hope for future development, so the company needs to strengthen support measures such as onboarding training and mentorship systems for new employees to help them adapt to the new working environment as soon as possible and integrate into the team.

(6) Loss risk: Due to the impact of aging, salary inequality and other issues, Company Z faces a greater risk of brain loss. The loss of core talents will not only lead to a decline in the company's technical strength and market competitiveness, but may also trigger a series of chain reactions such as low team morale and project delays. In order to retain core talents and attract more outstanding talents to join the company, companies need to develop strategies such as attractive salary systems, career development paths, and corporate culture.

(7) Working environment: Due to the particularity of offshore work, employees of Company Z face difficult working environment challenges. Problems such as poor signals, inconvenient shopping, and irregular work and rest not only affect employees' work experience and quality of life, but may also cause damage to their physical and mental health. In order to improve employees' working conditions and increase work efficiency, companies need to increase investment and transformation of the offshore working environment to create a more comfortable and safer working environment for employees.

(8) Mental health challenges: A closed working environment can easily cause employees' loneliness and psychological stress, and increase the risk of mental health problems. In order to protect employees' mental health and work efficiency, companies need to strengthen mental health education and support services for employees. For example, it has set up a psychological consultation hotline and carried out mental health lectures and trainings to help employees relieve psychological stress and distress in a timely manner. At the same time, it is also necessary to establish a sound employee care mechanism and social support system so that employees can feel the company's care and warmth.

5.4.3. Summarize

With its rich industry experience, high employee satisfaction and diversified job structure, Company Z has strong competitiveness in the industry. However, the aging workforce, unequal salary and promotion opportunities, and management and communication shortcomings have also brought certain challenges to the company. In order to maintain and enhance the company's competitiveness, Company Z needs to focus on and improve the salary structure, promotion mechanism, internal management and communication mechanism, while strengthening support for new employees and improving the difficult working environment. In addition, the company should also pay attention to the mental health of employees and provide them with necessary psychological support to promote the overall well-being of employees and the sustainable development of the company.

6. Z Company Employee Job Satisfaction Improvement Plan

In order to improve the satisfaction of Z Company's front-line employees, it is currently necessary to improve working conditions and environment, reduce work pressure, strengthen the balance between family and salary, increase the level of salary and benefits, and improve the career development and training system. The following improvement plans are proposed for these five aspects (see Table6. 1):

Table6. 1Improvement strategy table

Dimensions	question	Solution
Working environment and conditions	Poor living conditions	Improve the onboard environment
	Poor efficiency in material procurement	Improve the efficiency of material procurement
	Inconvenient communication	Enhance communication facilities
Work Pressure	Irregular work and rest schedule	Improve work and rest system
	High mental stress can easily lead to mental illness	Conduct mental health lectures and training
Family and work	Marriage Problems	Conduct social activities
	Family issues	Increase family visit benefits
Salary and Benefits	Low pay	Adjust the salary structure
	Uneven distribution of performance	Improve the performance distribution mechanism
	Few benefits	Increase welfare benefits
Career Development and Training	Few group trainings, self-funded exams	Establish a systematic training system and reduce the burden of certification
	Unclear promotion channels	Broaden promotion channels

Source: the author(2024)

6.1. Improve the working environment

(1) Improve the onboard environment: including upgrading accommodation, catering and entertainment facilities, which will involve a large hardware investment. The specific cost

depends on the scale and quality of the facility upgrade. It is estimated that the cost of adding hardware facilities such as fitness equipment and entertainment facilities is between RMB 300,000 and RMB 500,000. Currently, Company Z has 20 ships, so the estimated cost is between RMB 6 million and RMB 10 million. It is expected that the effect will be seen in 2 to 3 months. Although the cost is large, improving the living environment of employees is also the most direct way to improve employee job satisfaction.

(2) Improve the efficiency of material procurement: increase the frequency of transport ships to transport materials, and ensure that there is at least one transport ship to transport materials per week. This can directly and immediately improve the quality of life of employees, but as the frequency of transport ships transporting materials increases, the monthly transportation cost is expected to increase by RMB 1 million to 2 million.

(3) Enhance communication facilities: upgrade the onboard wireless network, satellite network equipment, etc. The cost may be high, depending on the equipment selection and coverage, and the estimated cost may reach millions of RMB. It may take several months to see the effect, depending on the equipment procurement and installation cycle.

6.2. Reduce work pressure

(1) Improve work and rest system: This measure mainly involves internal management adjustment to reduce employee pressure. It is relatively inexpensive and may mainly involve the cost of re-planning work processes and personnel arrangements. The expected cost is low and the time to take effect is short. The improvement effect may be seen within a few months.

(2) Conduct mental health lectures and training: Since employees stay in a closed environment at sea for a long time, they are prone to psychological problems. Therefore, it is necessary to regularly invite psychology experts to conduct online or offline lectures and training for employees to improve their awareness of mental health and teach them some basic psychological adjustment skills, such as relaxation training and mindfulness meditation. .

6.3. Strengthen the balance between family and work

(1) Conduct social activities: Social activities can be held regularly for unmarried employees to solve the employees' lifelong affairs. It is estimated that each social activity will cost about RMB 100,000 and it is expected to take one year to take effect.

(2) Increase family visit benefits: Develop family visit benefits for employees. The travel expenses of employees' family members within a certain number of visits can be reimbursed

by the company. The annual cost is expected to be around RMB 1 million and it is expected to take one year to take effect.

6.4. Improve the level of remuneration and benefits

(1) Adjust the salary structure: Directly increase employee salaries. The cost will be directly reflected in salary expenditure. The specific amount depends on the salary adjustment range and the number of employees. According to the current number of employees in Z Company, the monthly salary cost will increase by about RMB 500,000. The effect will be seen quickly, and the effect can be seen in the same month of salary adjustment.

(2) Improve the performance distribution mechanism: Adopt a performance scoring mechanism to score employees based on their monthly performance. Under the premise of ensuring the basic performance of each employee, a performance distribution mechanism of more work, more pay will be implemented.

(3) Increase welfare benefits: Increasing welfare items will directly increase company expenditure. The specific cost depends on the welfare content and coverage, which may reach millions of RMB. The effect will be seen quickly, and employees can feel the increase in welfare in the same month.

6.5. Improve the career development and training system

(1) Establish a systematic training system and reduce the burden of certification: In order to improve the professional ability of employees and reduce the economic burden, Z Company will establish a systematic training system, integrate training resources such as materials, equipment and teachers, and bear the certification costs of employees. This initiative is expected to involve an investment of several million RMB, and its effect will be apparent within six months to one year, depending on the smooth implementation of the training plan and the active participation of employees.

(2) Broaden promotion channels: In order to improve the job satisfaction and loyalty of Z Company employees, comprehensive improvement measures need to be taken. Clarify promotion channels and promotion standards, establish multi-level career development paths and quantitative and measurable standards, and ensure that the career development direction of employees is clear. At the same time, establish a fair and just promotion mechanism, break the constraints of internal relationship networks, implement anonymous review and avoidance systems, and provide employees with equal development opportunities. In addition, improve the salary and benefits system so that promoted employees can obtain corresponding salary increases and welfare improvements, and motivate employees to

actively pursue career advancement. These measures will effectively broaden the career development space of employees, improve satisfaction, enhance the cohesion and competitiveness of the company, and lay the foundation for the company's sustainable and healthy development.

6.6. Summary

The total investment in Z Company's employee job satisfaction improvement plan is expected to be between RMB 30 million and RMB 40 million. This cost covers many aspects such as improving working conditions and environment, increasing salary and benefits, strengthening supervision and management, and improving the career development and training system. Among them, projects with large single-time investments, such as improving the onboard environment, enhancing communication facilities, adjusting the salary structure, and increasing welfare benefits, account for the majority. In addition, the plan is expected to increase long-term expenses by about RMB 15 million per year, mainly used to maintain material procurement efficiency, continue to carry out social and family visit welfare activities, and bear employee certification costs. It is expected that these measures will gradually show results within a year and improve employee job satisfaction.

7. Conclusion

7.1. Conclusion Research

This study systematically analyzed the job satisfaction of front-line employees of Z Company by comprehensively using questionnaire surveys, in-depth interviews and Herzberg's two-factor theory, aiming to identify the key factors affecting employee satisfaction and propose corresponding improvement measures. The study found that although the overall satisfaction of front-line employees of Z Company is at a high level, there are still many aspects of dissatisfaction, especially in key areas such as salary and benefits, working environment, and career development.

First, in terms of salary and benefits, employees generally reflect that the salary level is lower than the industry average, and the performance distribution mechanism is unfair, which directly affects the work enthusiasm and loyalty of employees. As the basic guarantee and incentive means for employees' work, the rationality and fairness of salary and benefits have an important impact on employees' job satisfaction. Therefore, adjusting the salary structure, improving the performance distribution mechanism and increasing welfare benefits have become the primary tasks to improve employee satisfaction.

Secondly, in terms of the working environment, the particularity of working at sea makes employees face multiple challenges such as irregular work and rest, closed environment, difficulty in purchasing materials, and communication interruption. These factors not only increase the physical and mental pressure of employees, but also affect work efficiency and quality of life. Therefore, measures such as improving the onboard environment, improving the efficiency of material procurement, and enhancing communication facilities are crucial to improving employees' work experience and satisfaction.

Thirdly, in terms of career development, employees expressed dissatisfaction with the existing training system and promotion mechanism. They believe that the company's training system is scattered and disordered, lacks systematicity, and is difficult to meet the needs of personal career development; at the same time, the promotion path is unclear and promotion opportunities are scarce, which makes employees feel that their career prospects are bleak. Therefore, establishing a systematic training system, reducing the burden of employee certification and broadening promotion channels have become key measures to improve employee career satisfaction and loyalty.

Based on the above findings, this study proposes targeted improvement measures, including improving working conditions and environment, improving salary and welfare levels, strengthening supervision and management, and improving career development and training systems. The implementation of these measures will comprehensively improve employees'

job satisfaction and loyalty, thereby promoting the long-term and stable development of the company. Although this series of improvement measures will increase a lot of costs, it is also the most direct way to improve the job satisfaction of Z company employees and increase the retention rate of young employees.

In general, this study not only reveals the current situation and existing problems of job satisfaction of front-line employees of Z company, but also proposes practical improvement measures. By implementing these measures, it is expected that a more harmonious, efficient and attractive working environment will be created for Company Z, thereby attracting and retaining more outstanding talents and promoting the company's sustainable and healthy development.

7.2. Limitations of the Study

Although this study seeks to comprehensively analyze the job satisfaction of Z Company's offshore technicians and propose improvement strategies based on this, there are still several limitations, which are specifically manifested in the following aspects:

(1) Limited interviews: Given that most of Z Company's construction sites are located in deep-sea areas, the on-site environment is complex and the communication signal is poor, which limits the increase in interview samples.

(2) Difficulty in data collection: Due to the remoteness and harsh conditions of the construction site, there are many challenges in the data collection process. This not only increases the cost and time of data collection, but may also affect the integrity and representativeness of the data to a certain extent.

In summary, although this study has proposed targeted strategies to improve the job satisfaction of offshore technicians in Company Z, its conclusions and suggestions should still be treated with caution, considering the existence of the above limitations. Future research should focus on expanding the sample size, improving the questionnaire design, and strengthening environmental investigation and data collection to further improve the scientificity and practicality of the research.

7.3. Suggestions for future research

In order to deeply explore and effectively improve the job satisfaction of Z Company's offshore technicians, the following suggestions are made for future research: In view of the limited number of employees in Z Company, the research scope can be expanded to other offshore engineering units, and the industry commonalities can be found through

questionnaire distribution. At the same time, interviews can be conducted with specific subjects to directly listen to the voices of employees and ensure the accuracy of demand insights. On this basis, the questionnaire design should be improved to fully cover the multi-dimensional factors affecting satisfaction and ensure the breadth and depth of data collection. At the same time, field investigations of the actual working environment should be strengthened to understand the real challenges faced by employees and support problem analysis with data. In addition, diversified data sources, such as work logs and interview records, should be integrated to build a comprehensive and three-dimensional research framework. A continuous follow-up research and feedback mechanism should be established to adjust improvement strategies in a timely manner to ensure the effective implementation of improvement measures. Interdisciplinary cooperation should be encouraged, and research results in fields such as psychology and organizational behavior should be drawn on to provide a multi-dimensional perspective for satisfaction improvement strategies. At the same time, keep up with the pace of emerging technologies, explore the application potential of technologies such as artificial intelligence and big data in satisfaction research, and drive the deep integration of research and practice with technological innovation. The above measures aim to overcome the limitations of existing research and provide more scientific and effective strategies for improving employee satisfaction for Company Z and similar offshore engineering units.

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Appendices

Appendix A–Questionnaire

Dear,

I am doing a study about the job satisfaction of offshore employees of Company Z, which will only be applied to academic research.

The questionnaire is anonymous and confidential.

Please, fill in the questionnaire with honesty.

Thank you for your support and participation!

Part I – Personal and Professional information

1. Gender

A.Woman

B.Man

2. Marital status

A.Single

B.Married / Living common-law

C. Divorced

D. Widowed

3. Educational level

A. Junior college and below

B.Undergraduate course

C. Master

D.Doctor

4. Age

_____ years

5. Position in Company Z:

A.Captain

B.Chief engineer

C. Hanging machine operator

- D. Technician
- E. Management
- F. Other

6. Years of experience working in Company Z

- A. Less than a year
- B. 1-3 Years
- C. 4-6 Years
- D. 7-9 Years
- E. 10 or more years

7. Average annual income level in Company Z (including allowances, bonuses, etc.)

- A. Under 50,000 yuan
- B. 50,000-100,000 yuan
- C. 100,001- \$150,000 yuan
- D. 150,001-200,000 yuan
- E. More than 200,000 yuan

Part II - Job Satisfaction

Please circle a number about it on each question closest to reflecting your opinion.

		Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree moderately	Agree very much
1.	I feel I am being paid a fair amount for the work I do.	1	2	3	4	5	6
2.	There is really too little chance for promotion on my job.	1	2	3	4	5	6

3.	My supervisor is quite competent in doing his/her job.	1	2	3	4	5	6
4.	I am not satisfied with the benefits I receive.	1	2	3	4	5	6
5.	When I do a good job, I receive the recognition for it that I should receive.	1	2	3	4	5	6
6.	Many of our rules and procedures make doing a good job difficult.	1	2	3	4	5	6
7.	I like the people I work with.	1	2	3	4	5	6
8.	I sometimes find my work is meaningless.	1	2	3	4	5	6
9.	Communications seem good within the organization.	1	2	3	4	5	6
10.	Raises are too few and far between.	1	2	3	4	5	6
11.	Those who do well on the job stand a fair chance of being promoted.	1	2	3	4	5	6
12.	My supervisor is unfair to me.	1	2	3	4	5	6
13.	The benefits we receive are as	1	2	3	4	5	6

	good as most other organizations offer.						
14.	I do not feel the work I do is appreciated.	1	2	3	4	5	6
15.	My efforts to do a good job are seldom blocked by red tape.	1	2	3	4	5	6
16.	I find I had to work harder at my job because of the incompetence of people I work with.	1	2	3	4	5	6
17.	I like doing the things I do at work.						
18.	The goals of this organization are not clear to me.	1	2	3	4	5	6
19.	I feel unappreciated by the organization when I think about what they pay me.	1	2	3	4	5	6
20.	People get ahead as fast here as they do in other places.	1	2	3	4	5	6
21.	My supervisor shows to little interest in the feelings of	1	2	3	4	5	6

	subordinates.						
22.	The benefit package we have is equitable.	1	2	3	4	5	6
23.	There are few rewards for those who work here.	1	2	3	4	5	6
24.	I have so much to do at work.	1	2	3	4	5	6
25.	I enjoy coworkers.	1	2	3	4	5	6
26.	I often feel like I do not know what is going on with the organization.	1	2	3	4	5	6
27.	I feel a sense of pride in doing my job.	1	2	3	4	5	6
28.	I feel satisfied with my chances for salary increases.	1	2	3	4	5	6
29.	There are benefits we do not have which we should have.	1	2	3	4	5	6
30.	I like my supervisor.	1	2	3	4	5	6
31.	I have too many paperwork.	1	2	3	4	5	6
32.	I don't feel my efforts are rewarded the way they should be.	1	2	3	4	5	6
33.	I am satisfied with my chances for promotion.	1	2	3	4	5	6

34.	There is too much bickering and fighting at work.	1	2	3	4	5	6
35.	My work is enjoyable.	1	2	3	4	5	6
36.	Work assignments are not fully explained.	1	2	3	4	5	6

Appendix B– Z Company's personnel statistics from 2021 to 2023

Unit personnel statistics from 2021 to 2023					
Serial number	project	year			Remark
		2021	2022	2023	226 people at the end of 2020
1	Number of people at the end of the semester	220	219	208	
2	Among them: male employees	210	210	200	
3	Female employees	10	9	8	
4	Annual staff changes	-6	-1	-11	
5	Among them: New employees	6	7	10	
6	retire	7	3	6	
7	Resignation	5	5	15	
8	Educational Background				
9	Among them: Bachelor degree and above	44	49	56	
10	Specialist	36	38	41	
11	Below junior college	140	132	111	
12	Age structure				

13	Among them: 50-59 years old	115	117	128	
14	40-49 years old	65	56	38	
15	30-39 years old	30	33	30	
16	20-29 years old	10	13	12	
17	Employee Distribution				
18	Office staff	40	43	42	
19	Frontline technical workers	107	105	102	
20	Frontline technical management and leadership	73	71	64	