STUDY ON THE IMPACT OF MANAGEMENT TEAM STABILITY OF PROJECT PERFORMANCE

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Independent Study	STUDY ON THE IMPACT OF MANAGEMENT TEAM STABILITY OF PROJECT PERFORMANCE
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ABSTRACT

In the context of the transition from rapid economic development to stable economic development, project management capabilities have become one of the important factors for companies to maintain their competitive advantages. More and more companies have put forward the concept of reducing costs and increasing efficiency, which is important for project management teams. The stability puts forward higher requirements. The stability of the project management team plays an increasingly obvious role in the improvement of project performance, and its importance is increasing. Research on the impact of the stability of the project management team on project performance and the specific impact mechanism is also becoming more and more important Meaning.

Keywords: project management, project management team stability, team atmosphere, project performance, mediating role.

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Mr. Jindong Xu

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CHAPTER 1
INTRODUCTION

1.1 Overview

All walks of life are more and more interested in the operation mode of project management. With the increasing complexity and scale of the project and the intensification of market competition, the project management team is becoming more and more complex. In project management, to meet the requirements of all stakeholders for the project and achieve the project objectives, various management activities need to be carried out Technologies and means are becoming more and more diversified. The personnel who conduct various management activities such as planning, organization and control in project management are referred to as the project management team, excluding the project management office. (Toljaga-Nikolić et al., 2020) The project management team is not only the manager of the project, but also the leader and organizer of the project, and also the executor of decision-making. The management team should correctly use its authority and influence in leading and guiding the entire team to achieve the project objectives. Whether the management team has advanced management practices and good stability has a significant impact on the success of the project. Many scholars believe that team stability is very important in project management. (Arnulf, 2012) The team's stability is the outcome of members' long-term mutual trust and tacit understanding, demonstrating that the group has cohesion, energy, and a sense of belonging. (Santos & Santos, 2017) It is a critical component of a team's long-term survival and effectiveness. Faced with a complicated and ever-changing internal and external environment, A project, especially a start-up project, is difficult to rely on a single "entrepreneurial star" or "professional manager" to lead it to actively respond to the crisis and achieve stable development.(Almaqtari et al., 2020) The whole management team rather than one or two project managers should be responsible for the project performance. (Breugst et al., 2020) The importance of the project management team for project development will become more and more prominent. In theory, a project management team with efficient operation and high stability are precious and scarce.(Gryshova et al., 2019) It is a critical component of project development, as it aids in project stabilization and improvement.(Hoda & Murugesan, 2016) It is inconceivable that an unstable management team can lead the project

forward, produce higher project performance and achieve greater development space.

Figure1.1 Management team in operation（by author）

The rising complexity of project management has resulted in certain issues with team stability, such as weak team cohesion, low trust among team members, and a high inclination to leave the team.(Garcia & Russo, 2019) These unsteady elements have produced turbulence within the team, harmed the team's overall management effectiveness, and lowered project success. As a result, establishing the mechanism by which project management team stability influences project performance and developing ways to promote team stability to improve project performance is a pressing issue.(Wu et al., 2019)

Currently, management team study focuses mostly on the enterprise's senior management team, covering senior management transition, senior management wage structure, senior management shareholding, and senior management incentive, among other topics.(Peer & McKeon, 2017) There are few studies on the impact of the senior management team's stability on the enterprise's performance, and even fewer studies on the impact of the project management team's stability on project performance from the perspective of the project. Many academics studying team stability start with a narrow definition of team stability and look at how changes in the number of managers affect company performance, innovation performance, and internal control quality.(Abrams et al., 2021) There are few kinds of literature from the perspective of the broad definition of team stability. Based on the foregoing analysis and background, this paper begins with the perspective of innovation and the project management team, then investigates the impact of project management team stability on project performance,

and verifies the impact relationship between variables using a mix of qualitative and quantitative analysis.

1.2 The Statement of the Problem

1.2.1 Project management theory

A project is the system integration of elements formed to achieve one or a group of specific goals. The project is customer-centric, complex, and one-time. In the implementation process, multiple aspects should be comprehensively considered, including time, quality, cost, schedule, risk, stakeholder interests, etc. the project stakeholders organize human resources, material costs, financial funds, and other resources into one system through efforts and application of various methods, Plan and arrange according to the common methods of business model, and limit the project time, to achieve the quality and quantity indicators specified by the project objectives.(McLaren & Loosemore, 2019) The American Project Management Association (PMI) published the book "guide to project management knowledge system", which defines the project as a systematic work to create unique products, services, or achievements. Based on the accepted management principles, project management is a set of technical methods used to plan work activities, evaluate work processes, and control work results.(Anagnostopoulos et al., 2018) These technologies or methods must achieve the desired final effect according to the project duration, project budget, and formulated specifications. Scope management, time management, budget management, human resource management, quality management, risk management, and comprehensive management are all essential components of project management, which span the full project process. The primary goals of project management are to meet not just the project's projected outcomes, but also the requirements and expectations of project stakeholders in various roles.(Wakeman & Langham, 2018) expectations, as well as understand and meet the project's unidentified requirements to the maximum extent possible. In modern project management, the demand of the organization for the project is usually based on one or more of the following strategic considerations, including market demand, business demand, strategic opportunities, etc. at the social level, there are also social needs, environmental considerations, customer needs, technological progress, and legal requirements.(Chen et al., 2021) Through a project, the company's strategic business plan can be changed, and the product output can be changed Operation system and organization system. In the early research, project management was technology-oriented and applied research was carried out using technical methods such as network planning, CPM, and WBS. In the 21st century, management-oriented research has gradually begun, and attention has been paid to the organizational structure, human resources, team communication, conflict management, and overall team research of the project.(Ruiz-Jiménez & Fuentes-Fuentes, 2016) Modern project management is systematic. It will not separate the project management process because of the implementation stage of the project but integrate the whole project management work as a complete management process. The specific management activities such as planning, organization, implementation, control, and innovation in each project stage will be incorporated into the project management system for consideration and arrangement.(Boone et al., 2019) Modern project management theory requires that the project manager should be adjusted at any time

according to the specific situation. The characteristics of the professional field of the project and the specific situation of the implementation process, or various constraints faced in the process of project implementation, should be solved with professional methods.(Zhang, 2019) Dividing a project into several project stages that are convenient for management, and subdividing the management activities into these different stages, will become a series of specific management processes so that the project can be managed by stages and processes. As a result, modern project management gives significant attention to the project management stage and process.(Song et al., 2020) For projects in a general sense, modern project management will divide them into main work stages. The following are the stages of project work: definition and decision-making, planning and design, implementation and control, and completion and delivery.

1.2.2 Human capital theory

The human capital theory was created by American economists Schultz and Becker in the early stages of economic research.(Wang et al., 2020) It ushered in a new way of thinking about human capability for output. Material capital refers to the capital of material items, such as machinery, plant, equipment, raw materials, and so on, according to this theory. The sum of a producer's investment in education and vocational training, as well as the opportunity cost of receiving an education, is referred to as human capital. It is defined as a person's stock of diverse production knowledge, labor and management skills, and health quality, which represents a person's total quality and aptitude. There are similarities and distinctions between human capital and material capital. The similarities between the two are that they both have similar capital features and can provide businesses with certain benefits.(Ketzler & Zimmermann, 2013) The disparities are due to their varied methods of getting advantages as well as significant differences in return rates. In the process of changing the mode of social and economic development, the scarcity of material capital is becoming lower and lower, and it is becoming more and more replaceable in enterprises, while the irreplaceable and scarcity of human capital are becoming stronger and stronger, which determines the efficiency and success or failure of enterprises to a great extent. Schultz also proposed that the concept of human capital should be included in the analysis system like other forms of capital.

Human capital develops as a result of the investment. It plays a vital function in social production, just like the land, capital, and other substantive factors.(Ellison et al., 2019) Human resources, according to modern capital theory, are the most valuable of all resources. Human capital plays a larger influence on economic progress than material capital. By maintaining and continuously improving the level of human resources, enterprises can maintain prosperity.(Qin et al., 2021) The improvement of enterprise productivity depends on a variety of factors, which work together, It affects the development results of enterprises. Of course, the improvement of enterprise productivity can rely on natural resources and physical capital, and the role of human resources in the improvement of enterprise productivity can not be ignored.(Dalle et al., 2017) Schultz also believes that enterprise human capital is not obtained free of charge, and people gradually accumulate various elements in the process of learning and practice, These elements play a role in various economic activities and create value, which has the same attributes as money and material capital.(Bariviera & Merediz-Solà,

2021) Human capital has become a precious resource and a vital source of core competitiveness for modern firms, according to modern management-related theoretical research.

Human capital theory can help us better understand the impact of project management team stability on project performance.(Richard Shumway et al., 2015) The specialized human capital mentioned in this paper refers to each member of the project management team who has been working and learning in the same environment during the process of enterprise growth, mutual recognition, mutual understanding, and mutual learning, forming the management team's special working methods and knowledge management system, and there is a high level of tacit understanding between them.(Sent & van Staveren, 2019) However, if project management team members have a high turnover intention or if the team's mutual trust is shaky, the original harmonious working atmosphere and mutual recognition will be broken, and the efficient special working mode and knowledge management system formed by the original team will no longer adapt to the current environment, resulting in a significant decrease inefficiency.

Therefore, to maintain the stability of the team and create greater value, members of the project management team are usually more willing and very active to cooperate, which forms a special kind of project productivity. Furthermore, when a member of the management team leaves, it has an impact on other members, and other members may contemplate leaving as well, further lowering the team's work efficiency... For a project, the management team is the most important team for the completion of the project. It is made up of a group of people who have a high level of ability, high quality, and a strong sense of belonging to the project.(Mariano-Hernández et al., 2021) It is simpler for them to develop specialized human resources for the project team. As a result, the project management team's instability will impair the project's operation and management, harming the project's performance.

1.2.3 Incentive theory

In today's business world, incentive theory can help you get the most out of your employees' efforts and commitment to the company and their jobs. Different incentive effects can be achieved in this process by using different approaches and systems. In other words, the goal of incentive theory is to mobilize employee enthusiasm, fully utilize employee potential, boost employee effort, and ultimately improve the overall work efficiency of the business by addressing employee demands. Maslow's demand hierarchy theory and Herzberg's two-factor theory are two of the most prominent incentive theories. In the realm of psychology, Maslow's hierarchy of needs hypothesis is an incentive theory. Physiological requirements, safety needs, social needs, respect needs, and self-realization needs are placed in a hierarchical order from bottom to top, according to this theory. Physiological and security requirements are classified as low-level needs, self-realization needs are classified as high-level needs, and social and respect needs are classified as intermediate needs. Later generations will only pursue higher-level wants once the lower-level needs have been met, and once the lower-level needs have been met, they will no longer have an incentive impact. They must rely on higher-level requirements to be supplied at this moment to provide an incentive effect. Because of the advancement of human society and the advancement of material civilization, everyone's wants will alter.(Awan et al., 2020) In an enterprise, if managers want to mobilize employees' work enthusiasm, they should first consider the demand

level of employees. Employees can only receive a good incentive effect if they take appropriate incentive measures based on their demand level. Because their position differs from that of ordinary employees, senior managers naturally assume greater obligations and responsibilities, resulting in a demand level that is higher than that of ordinary employees.(Liu et al., 2020) Senior executives will be more concerned with whether they can achieve respect and self-worth, as well as whether they have particular social status requirements. As a result, rather than monetary remuneration, long-term stock compensation can be employed as an incentive for senior management. Herzberg, an American psychologist, proposed the two-factor hypothesis in 1959.(Patel & Pitroda, 2021) Incentives and health variables are divided into two groups in the theory of human labor motivation. The term "incentive factors" refers to elements that can make an organization's personnel happy. We can obtain results that please employees, activate their work passion, and then increase the enterprise's production efficiency by boosting the incentive factors. The elements that contribute to employee unhappiness are referred to as health care factors. When health-care needs aren't satisfied, employees are more likely to experience bad feelings and lose motivation at work, which has an impact on the organization's productivity. Employee unhappiness can be eliminated by increasing health care factors, but once those variables are met, improving health care factors will not improve employees' job enthusiasm. When developing a compensation system, businesses must consider employees' health demands; otherwise, employees would be unsatisfied; nevertheless, simply addressing employees' health needs will not fully ignite their work enthusiasm. Designing an appropriate wage structure for executives, based on their health and incentive variables, is a key aspect of encouraging executives to work hard.(Dyakonov et al., 2019) As a result, to create the incentive effect, we must design suitable incentive strategies based on various objectives.

1.3 Research Background of Project Management Team Stability

As the economy transitions from an era of rapid growth to one of steady growth, project management ability has become one of the most crucial criteria for businesses to sustain their competitive edge. More and more businesses are promoting the concept of cost reduction and efficiency improvement, which raises the stakes for the project management team's stability. The stability of the project management team is becoming increasingly important in improving project performance, and its importance is growing by the day. The influence of project management team stability on project performance, as well as the specific impact mechanism, is equally crucial to investigate.

1.4 Research Questions and Significance of Object

1.4.1 Research questions

This is quantitative research to see how the stability of the management team affects project performance. This study was conducted in Wuhan, Hubei Province. The data were collected from various industry management teams in China through an online questionnaire survey. The study's ultimate goal is to investigate and assess the relationship between project management team stability, team atmosphere, and project performance. Other possible variables are not taken into account and then build a model. Therefore, it is possible to ignore other variables in the model and their potential impact

relationship.

RQ 1. Does the management team's stability have a major beneficial impact on project outcomes?

RQ 2. Does team cohesion have a substantial impact on project outcomes?

RQ 3. Is there a link between team trust and project success?

RQ 4. Does the desire to leave have a major short-term negative influence on project performance?

RQ 5. Is there a link between project management team climate and project performance?

1.4.2 Significance of the research

Through this research, it can help team managers in various industries (1) supplement the research in the field of project management and the impact on project performance. The impact of project management team stability on project performance is investigated in this research. Previous research has mostly focused on the stability of the enterprise management team. (2) Prior studies evaluating the impact of project management team stability on project performance by investigating the role of team climate as an intermediary variable have not used team climate as an intermediary variable. The impact link between these three variables will be studied and explored in depth in this research.

1.5 Scope of Research

The relationship between project management team stability, team atmosphere, and project performance was explored using a sample group (N = 168) in this study, which then looked at the relationship between the three variables using survey findings. Over 4 weeks, 203 questionnaires were collected. After screening and eliminating the invalid questionnaires, 168 valid questionnaires were finally obtained, Then the statistical software SPSS is used for statistical analysis and model verification.

1.6 Research Method

The data of the Chinese management team were collected by self-management questionnaire. The purpose of the questionnaire is to collect quantitative data on the factors affecting the stability of the Chinese management team. This paper investigates the relationship between project management team stability, team climate, and project performance using some classic management theories, such as project management theory, human capital theory, and incentive theory, and proposes the conceptual model of this paper, in which project management team stability is an independent variable, team climate is an intermediary variable, and project performance is the dependent variable. The empirical research approach will be used in this study. By summarizing the previous mature measurement scales, combined with the needs of this research, this paper designs the questionnaire. In the process of issuing the questionnaire, the survey results are mainly collected through online channels, including online questionnaire filling platforms such as questionnaire star and questionnaire square, as well as e-mail. The e-questionnaire is randomly distributed to the employees of enterprises who have participated and are participating in project management. The statistical software SPSS was used for statistical analysis and model validation. The test findings reveal that the questionnaire's reliability and validity are both good.(Ribeiro et al., 2017) Team

cohesion and trust have a substantial positive influence on project performance, while turnover intention has a big negative impact on project performance and team climate has a significant positive impact on project performance, according to the model test results. The relationship between team cohesion and project performance, team trust, project performance, turnover intention, and project performance is all mediated by team climate.

1.7 Definition of Terms

1.7.1 Management team stability

The project management team, excluding the project management office, refers to the people who conduct various management functions in project management, such as planning, organization, and control. There are two types of team stability: broad and narrow. Team stability, in its broadest definition, refers to a condition in which the number of team members, team cohesion, and team trust is reasonably stable, and team members have no plans to quit. In a strict sense, it refers to a circumstance in which members of the project management team refuse to depart. The stability indicator is currently at a high level. This study examines team stability in a broad sense and selects 35 project management teams from diverse industries as the research object of this paper, meaning the project management team, to examine the influence of changing the number of executives on the stability of the management team. Through field visits, introduce them to the definition of management team stability, the status of research, the importance of research, and the division of some measurement dimensions of team stability, and then ask them to fill in the questions based on the current situation, summarize the final questionnaire, refine all answers, and retain the most high-frequency vocabulary. Finally, three characteristics of team cohesion, trust, and turnover intention were chosen to assess the management team's stability.

1.7.2 Team cohesiveness

the accumulation of team members' emotional engagement. In the course of work and team interaction, the more the team cohesion, the greater the degree of collaboration among members, and the higher the consistency of team member's behavior, the greater the team centripetal force and the better the team potential are stimulated. To enhance the achievement of project performance objectives, complete team duties with optimum efficiency, and better meet team responsibilities.

1.7.3 Team trust

The level of mutual trust among project team members is referred to as team trust. Trust is the foundation of teamwork. The trustor is exposed to a risk, and must bear the loss as a result of the trustee's dishonesty; second, the behavior of the trusted person is outside the trustor's control; and third, if one party defaults, the other will benefit in the short term. Friendship and trust between team members are major factors impacting project effectiveness in team collaboration. Although trust is a psychological contract, the implementation of team cooperation will lose the guarantee of order if there is no

trust among team members.

1.7.4 Turnover intention

Intention to turn around. Team members' voluntary departure from their team is referred to as turnover intention, which relates to their next withdrawal behavior after experiencing dissatisfaction. Resignation is a direct effect of turnover intentions. The higher a team's turnover intention score, the more unstable it is, and voluntary resignation should be kept to a minimum or kept at a reasonable level. It's critical to pay attention to team member turnover intentions when researching team stability.

1.7.5 Team trust

The common view of team members about the team environment is referred to as team atmosphere. The way team members perceive it will have an impact on their conduct. The team atmosphere is not only a set of quantitative traits that can be readily observed by team members and used to influence the behavior of internal members, but it is also a set of measurable attributes.

1.7.6 Project performance

The achievement of project functional indicators is referred to as project performance. It is a crucial aspect of organizational success. It is the project completion that management team members have eventually achieved via their efforts. Environment, opportunity, reward, individual ability, and other factors all have an impact on success. Objective elements include the environment and opportunity, whereas subjective factors include the incentive and individual ability of members. Financial and non-financial effect indicators are the most common metrics used to assess project performance. The project performance measurement in this work is based on a combination of two methods: traditional project performance measurement (construction period, quality, and cost) and project stakeholders' feelings.

1.8 Future Research

Only the impact relations between the three variables of project management team stability, team climate, and project performance are examined in this study, which includes hypothesis and empirical tests. It does not look into the internal impact mechanism in depth. However, there are some limitations to this paper. The number of valid questionnaires collected in the empirical research section of this paper is small, which could lead to some errors in the data analysis results. In future research, we can look into and analyze the relationship between project management team stability, team atmosphere, and project performance. Future research on this topic could begin with a deeper internal effect mechanism between project management team stability, team atmosphere, and project performance, then split each variable into more various dimensions, and then investigate the internal impact mechanism of the variables.

CHAPTER2
LITERATURE REVIEW

2.1 Definitions

2.1.1 Research on team stability

There are two types of team stability: broad and narrow. In a broad sense, team stability refers to a situation in which the number of team members, team cohesion, team initiative, and member trust stay reasonably stable, and team members do not tend to resign in significant numbers. In a strict sense, it refers to the circumstance when members of the R&D team have not left. The broad concept of team stability used in this study is adopted, and team stability is measured using three dimensions: team cohesion, team trust, and turnover intention. Currently, team stability research is mostly separated into two categories: qualitative research and quantitative research. It primarily focuses on determining what factors influence team stability and how to improve team stability. The team's stability will deteriorate as a result of bad communication within the team, poor incentive measures, a lack of sense of belonging among team members, and so on. We can improve the communication mechanism, establish a special communication system, increase communication channels, and implement learning and training for employees Optimize various incentives such as salary to stimulate employees' enthusiasm and strengthen members' sense of identity with the team, to improve the stability of the team.(Zubizarreta et al., 2021).

Team goals can provide direction to team members. When the team goals are very clear and approved by senior managers and team members, team members are more willing to stay in the team until the goals are reached, which is better for the team's stability and long-term success.(McLaren & Loosemore, 2019) Employee satisfaction, team cohesion, and team stability can all benefit from transformational leadership since it pays greater attention to the personalities of employees.(Ribeiro et al., 2017) Improving team member advancement mechanisms, utilizing more fair performance rating systems, and conducting various team construction and training activities in the team can all help to improve team member integration. Boost team cohesion. In terms of quantitative research, some studies have discovered a correlation between team stability and executive turnover in the corporate world. The tenure intentions of general executives are influenced by the primary executives (general manager and chairman). The inclination of general executives to change jobs will be influenced by the departure of the top executive.(Stanitsas et al., 2021) The dependent variable is team stability after a senior management change, the independent variable is the type of senior management change, the independent variable is the term of office of the changed senior management, the regulating variable is the source of senior management successors, and the regulating variable is the management shareholding. The findings reveal a significant link between team stability and senior management change, as well as some recommendations for how to increase team stability from the standpoint of senior management change. It gives us a new viewpoint on studying the management team's stability, however, because the research is intended for enterprise executives, the

tenure is typically longer, as opposed to project managers' duration.

The author employs the stability index Si to assess team stability. In his research in 2002, Crutchley, a foreign scholar, introduced the idea for this index for the first time. It specifically refers to the replacement of other team members after the departure of top executives from publicly traded companies.(Silvius, 2021) It's calculated mostly by analyzing changes in specific team members and team size before and after a senior management transition year, as well as during the year. Finally, to test the hypothesis, a regression model is developed. As an independent variable, several researchers look at the impact of team stability on enterprise performance. According to several studies, when a company's performance is weak, the stability of the senior management team is also damaged. (Sent & van Staveren, 2019) In the short term, there is a correlation between the founding team's stability and the company's performance. (Zhang, 2019) It suggests some avenues for further investigation into the effects of project management team stability on project performance. For entrepreneurial teams, team cognitive locking can promote team stability, and reducing the salary gap is also conducive to improving team stability.

2.1.2 Research on team climate

In 1936, Lewin proposed the concept of team atmosphere for the first time. He feels that team atmosphere refers to how team members perceive the team's surroundings. It will affect team members' behavior after they perceive it. Some researchers believe that team climate affects not just the conduct of internal members, but also several quantitative features. (Lalmi et al., 2021) Most scholars now use this concept, and the team atmosphere in this paper follows suit.

Many academics have investigated team climate from various perspectives. Team members' intuition and feelings about the innovation environment might influence their innovation motivation and approaches, which in turn can influence their innovation behavior. The impact of transformational leadership on innovation performance is mediated by the innovation atmosphere, which is a key indicator of team cooperation. Anderson and West proposed the TCI scale in 1994. It has subsequently become the gold standard in the field of climate innovation research. Support for creativity, vision and goal-setting, participation assurance, and task orientation are the four components of the metric. When it comes to team creativity, the component of innovation support is regarded to have the strongest predictive power. When there is a high level of innovation support, goal orientation has a greater impact on team members' innovative behavior.

When the team innovation atmosphere is stronger, the scientific creativity of the team is also stronger. (Arnulf, 2012) Some scholars have also studied team climate from the moral direction and proposed that organizational moral climate is the common cognition of members of the organization on moral issues and the moral standard they follow when facing moral issues. Organizational moral climate has a significant impact on employees' moral behavior and decision-making.(Zhang, 2019), When the types of organizational moral climate are different, the impact on organizational citizenship behavior is also different. Organizational moral climate has a significant impact on the production of organizational citizenship behavior, in which organizational commitment

plays an intermediary role.(Patel & Pitroda, 2021)

Team climate has varied research results as an antecedent variable, outcome variable, and intermediary variable in team climate research. Some researchers believe that diverse leadership styles contribute to distinct team climates, and that leadership style has an impact on the establishment of a positive team environment.(Ketzler & Zimmermann, 2013). Others feel that leadership emotional intelligence has a positive impact on team climate. The team climate is more positive when the leader's emotional intelligence is high. To some extent, leadership behavior can directly influence team climate. Some research has discovered that organizational climate is influenced by organizational cultural diversity, that team climate has a strong positive impact on organizational identity, and that team climate affects organizational performance. (Arnulf, 2012) As an intermediary variable, team climate might be used. According to several studies, team atmosphere acts as a buffer between leadership and team members' advise behavior.

2.1.3 Research on project performance

There are typically two points of view on the importance of performance. Some researchers argue that performance is a consequence, which refers to the outcome and accomplishments that people obtain via their job.(He et al., 2018) Others feel that performance is a behavior, which is defined as the observed performance behavior of people's actual processes. From the perspective of management, performance can be divided into two aspects: personal performance and organizational performance. In the early research, people pay more attention to personal performance. With the growth of the economy and the extension of organizational scale, an increasing number of academics are focusing on organizational performance. Simultaneously, they work to combine personal and organizational performance to improve overall effect and project performance. Efficiency is a project management concept and a critical component of organizational performance. The achievement of project functional indicators is referred to as this. In this paper, one's definition of project performance is used, namely, performance is a result, which is the project result finally achieved by management team members through their efforts, as well as traditional project performance measurement (construction period, quality, and cost) and project stakeholders' feelings.

Project performance is usually addressed as a dependent variable in most research. A lot of academics are looking into ways to improve project performance. Project performance may be divided into three categories, according to some research: process learning, quality, and stakeholder performance, with project performance being improved by enhancing team competency and strengthening the team's trust environment.(Tereso et al., 2019) While researching project performance, some academics discovered that project performance may be rated based on three factors: quality, procedure, and innovative learning, as well as stakeholders. (Too & Weaver, 2014) In the process of exploring the improvement of construction project performance, some studies show that the owner's trust in the contractor can create a harmonious working atmosphere, Reduce negative phenomena such as abuse of power and improve project performance.(Nijhuis et al., 2018) The project manager's permitted leadership behavior will also have an impact on project performance. The project manager can provide team members with more work autonomy, encourage them to engage in decision-making, boost their work excitement, and improve emotional communication

with team members by giving them more work autonomy. Improve project performance by increasing team members' sense of belonging.

The project manager's service-oriented leadership will also have an impact on project performance. In team management, the attitude and behavior of team members will be affected by the behavior of the project manager. When the service-oriented leadership of the project manager is high, the satisfaction of team members will improve and the project performance will also improve.(Mir & Pinnington, 2014) We should pay attention to team members' ability to acquire and apply knowledge, learn on time, improve professional and technical level, strengthen interaction with project stakeholders, receive more effective information from a variety of sources, and improve project performance while improving project management level in the project management process(Bjorvatn & Wald, 2018). Paying attention to the progress, quality, cost, safety, and stakeholder relationship coordination in performance management can avoid the damage to the project and enterprise reputation caused by project delay and cost waste, and make the project performance achieve multi-directional coordination and improvement.

2.2 Proposal of Research Hypothesis

2.2.1 Relationship between management team stability and project performance

Many academic studies have demonstrated that project performance is influenced by team stability and that strengthening management team stability can increase project performance. The project management group is separate from the rest of the group. A normal project team's members are transient, and team instability is prevalent; however, a project management team's stability is more conducive to project management at all stages. Managers get more familiar with the project's business and procedures during project management, and team members' tacit comprehension improves. When there are more personnel changes and the team's stability is disrupted, the project's progress and the final performance will be harmed. It has been established that the stability of a company's senior management team can turn a company's declining performance into profits. (Conforto et al., 2016)

When the team relationship is steady and amicable, the team members have a greater sense of cooperation and the overall situation. The spirit of cooperation not only improves the management team's cohesion but also boosts team members' sense of organizational support, ensuring the organization's efficient operation. Internal members of an organization or team's sense of identity will be strengthened, according to the social identity theory, if they share more comparable interests and beliefs. This theory will be unique to the project management team that will be discussed in this study. Because the members of the management team have a higher average educational level and some management experience, they have a more similar thinking viewpoint when looking at challenges, as well as greater similarities and consistency in behavior and value orientation, allowing the team to last longer. Maintain equilibrium. Product renewal and technological upgrades are speeding up in today's fast-paced market climate. A solid management team can undoubtedly develop a tacit understanding of market decision-making, reach consensus, increase project control, and efficiently allocate and integrate various resources in the project management process, all of which

will improve project performance.

If a project wants to obtain the scheduled project performance, the project managers need to pay certain private costs (such as paying more time and energy and undertaking greater risks in the process of project management), and the managers will also obtain certain private benefits (such as higher remuneration and better reputation) Therefore, team members will weigh these two aspects in the process of project management. If the private cost paid by the management team is high, it will get better project performance; on the contrary, if the private cost paid by the team is low, it will get worse project performance. Therefore, if the management team can maintain relative stability for a certain period, it will get better project performance, in the end, Benefit from good project performance. When members of the management team leave frequently and the team is unstable, it is difficult to benefit from the project's end performance. As a result, to achieve greater project performance and benefit, the management team prefers to retain relative stability for a length of time.

Taking the project R & D team in the automotive industry as an example, Zheng Hu studied the impact of team stability on project management performance. By using input-output theory, he analyzed the input and output in different project stages and obtained the impact of R & D team stability on project management performance in different stages: competition stage, start-up stage, implementation stage, and closure stage. If the project management team is unstable, it will have a great impact on the project risk, project cost, project quality, completion time, and stakeholder satisfaction. At the same time, due to the team's instability, has a significant impact on the project team's construction, and highlights six evaluation factors of project management performance: project completion time, project quality, project cost, and project stakeholders It is pointed out that team stability directly or indirectly affects project management performance. Therefore, improving project team stability is of great practical significance to improving project management performance. (Kanagarajoo et al., 2020).

The importance of team cohesion in team stability cannot be overstated. When the project management team's stability is strong, the team's cohesion is increased, and members have higher mutual attraction, allowing the team to establish a centripetal force, focus on the team's overall goal, and maximize individual and team potential. Team cohesion is both a resulting force and an interpersonal attraction, according to L Festinger, an American social psychologist. This attraction enables team members to be willing to stay within the group for a long time. This attraction is mainly manifested in three aspects: (1) When the team's spirit, goal direction, and organizational form are suitable for members, the team is more attractive to members, on the contrary, it is less attractive. In serious cases, team members will have feelings of disgust and boredom, resulting in separation from the team. (2) The team can meet the various needs of all members and has different material and spiritual needs according to different members. The team enhances its attraction to team members by meeting their various needs. (3) Within the team, when the relationship between members is harmonious and there are consistent interest needs, team members have more emotional communication and form an atmosphere of mutual help, which makes the team more attractive. If team members dislike and repel each other, the attraction to members will be greatly weakened. When the team cohesion is maintained in a relatively stable state, team members are more likely to form mutual trust The identification of the same interests will be automatically

transformed into specific actions to safeguard the interests of the project. The interaction and communication among team members will be improved, the degree of integration will be increased, and team cohesion will be increased, resulting in a virtuous circle that is conducive to project success. Guo Jian, a domestic scholar, etc., created the antecedent variable of the project manager's goal orientation and the conclusion variable of the project team performance. This paper investigates how project managers' goal orientation affects project team performance using a theoretical model with outcome variables, team cohesion, and team learning as intermediary variables.

The findings show that the project manager's development of employee goal orientation can completely improve project team performance by affecting team cohesion and team learning behavior; the project manager's performance approaching goal orientation uses team cohesion as an intermediary mechanism to have a positive impact on project team performance. The higher the team cohesion is, the stronger the work commitment of the team members is, and the more important it is to achieve the common goal favorably. (Khalife et al., 2021) According to some studies, team cohesion has a significant positive impact on organizational citizenship behavior and team performance, with organizational citizenship behavior serving as an intermediary in the impact of team cohesion on team performance.

In the practice of project management, we can not only play a direct role in promoting team performance by enhancing team cohesion but also connect team cohesion with organizational citizenship behavior. Through some incentive measures, members of high cohesion teams are more inclined to express public behavior, to maximize the promotion of team cohesion on team performance.(Fridgeirsson et al., 2021) Team cohesion has a detrimental impact on turnover intentions and anti-productive work conduct. The team's interpersonal attraction and sense of belonging to the organization can effectively improve employees' willingness to work in the organization, reduce rumors and slander among employees, and reduce employees' distrust and criticism of the organization, all of which contribute to the project's success.

Turnover intentions and anti-productive work conduct are negatively impacted by team cohesion. Employees' willingness to work in the organization, rumors, and slander among employees and employees' suspicion and criticism of the organization can all be improved by the team's interpersonal attraction and sense of belonging to the organization, all of which contribute to the project's success.

Members of a team with low trust will lack a sense of belonging and accomplishment, making project promotion inefficient. This will lead to avoidance of responsibility and prevarication, diminishing the team's centripetal force. When team members have a high level of trust and it is kept in a generally stable state, it is easier to lower the team's communication costs, improve communication efficiency, and establish a consensus in a mutually trusting environment. Members of the team will make every effort to meet the predetermined performance goals. Team members are better equipped to provide feedback and support to one another, and they can focus their time and energy on solving real problems. When a team's decision-making and resource allocation are in conflict, the management team can successfully avoid team member conflict and maintain stability. They can work together as a team in the process. It promotes work collaboration and task handover, ensuring that the project process runs smoothly and that high project performance is achieved. According to the findings, the

project team's performance is influenced by the level of trust. (Copola Azenha et al., 2021) Other research has found that trust has an impact on all levels of the entrepreneurial team development process, from entrepreneurial members to entrepreneurial organizations, and from the formation and operation of entrepreneurial teams to the realization of team performance and project success. Unlike the material resources required for project operation, trust is a valuable spiritual resource, which he believes can be used Starting from the psychological process of trust development of senior management team, in different stages of trust development, according to the different characteristics of team trust status, take targeted trust management measures to help senior management team strengthen trust management, promote team cooperation and improve organizational operational efficiency.

Trust is a necessary condition for the top management team to achieve high performance. The top management team's process and result performance are significantly influenced by trust.(Özkan & Mishra, 2019) Communication is also influenced by the level of trust among team members. Team members' trust and the realization of good communication are especially important, and they have varying degrees and directions of impact on team effectiveness. MAI Fanrui. The intention of turnover is a crucial component of team stability. The direct effect of turnover intention is turnover. When team members willingly quit their team, this is referred to as turnover intention, and it refers to the next withdrawal behavior after members experience displeasure. The greater a team's turnover intention score is, the more unstable it is. The team's voluntary turnover should be reduced or kept at a reasonable and consistent level. In the study of team stability, it is not always necessary to pay attention to team member turnover intentions. When there are significant changes in team members, the team's stability will fluctuate, and the team will be in a state of flux for a short period. In the long run, the tacit understanding and cooperation mode formed by team members are harmed, and the project process is harmed, which is not conducive to meeting expected performance objectives. In conclusion, this study brings up the following assumptions:

H1: *the stability of the management team has a strong favorable impact on project performance.*

H1a: *project performance is significantly improved by team cohesion.*

H1b: *project performance is significantly influenced by team trust.*

H1c: *turnover intention has a significant negative impact on project performance in the short term.*

2.2.2 Relationship between team climate and project performance

The team atmosphere is a psychological perception of team members' surrounding environment. The atmosphere can not only affect the behavior of team members but also directly affect the improvement of team efficiency and output. The specific mechanism of team atmosphere affecting performance is that when team members are in the same team atmosphere, their inner cognition will be affected by this environment. The change of cognition leads to the change of members' beliefs, attitudes, values, and other concepts, and the change of psychological cognition will have a direct impact on employees' behavior, For example, team members' enthusiasm for work and their willingness to devote time and energy to work will eventually affect their performance and project performance. The research shows that team climate can significantly predict

the effectiveness of teamwork plans and the completion rate of team tasks.

The team environment is linked to job performance, initiative, team relationships, and happiness because it reflects team members' general perceptions of the team structure, operation process, and outcomes. Team climate ultimately affects individual job performance and the overall output of the team by affecting employees' job motivation and job satisfaction. When the innovation climate of the team is good, the effectiveness of the team will also be improved, to improve the project performance.(Zeb et al., 2020) When some researchers looked into the development team's climate, they discovered that it has a considerable positive impact on team enthusiasm and, as a result, project performance (Bornay-Barrachina & Herrero, 2018). Zhou Xiao, a domestic scholar, conducted empirical research on venture capital enterprises by studying the TCI scale and established the climate scale and team performance scale for the project team of venture capital enterprises, The research shows that the team atmosphere consists of five dimensions, namely vision and goal, leadership style, interpersonal relationship, communication and cooperation, and participation guarantee. The mood in the team has a favorable effect on team performance. When the five dimensions of the team atmosphere show a healthy and harmonious development relationship, the team atmosphere will be more harmonious. At this time, the team leadership style is recognized, Team members work together for team goals, the collaborative relationship is strengthened, the participation in team affairs is strengthened, and the relationship between members will be closer. Based on the enhancement of team centripetal force, the team performance will also be improved. (Arslan et al., 2021).

While investigating the impact of team climate on new product development performance, some researchers observed a significant positive correlation between team environment and new product development performance. To create good performance in the product development cycle, we should start with cultivating a good team climate, have clear team objectives, have a team leadership style and style suitable for the team, and strengthen the support for team innovation activities, When members participate in decision-making, some safeguard measures are formulated to enable them to put forward constructive suggestions for project development. These measures can improve the team atmosphere and play a good role in improving project performance.(Daspit et al., 2013) Team climate can also act as an intermediary variable on individual and team outcome variables. When studying the impact of transformational leadership on organizational citizenship behavior, some scholars found that the team innovation climate plays an intermediary role. When the team is dynamic and leaders are tolerant of the risk of failure of innovation activities, the team innovation climate is stronger and team members are more likely to make behaviors that exceed the expectations of the Organization. Team climate also has a positive impact on knowledge sharing. Research shows that team innovation performance is positively affected by team climate and knowledge sharing. (Zhou & Verburg, 2020)

Team atmosphere will also have an impact on the participation level of team members. When the team atmosphere has lower bureaucracy, stronger support, and innovation, members have more enthusiasm to participate in work, and it is easier to give full play to their potential in such an environment, achieve team goals while achieving personal goals, to improve project performance.(González-Gómez & Richter, 2015) Organizational hierarchy in a team atmosphere has significant predictive power

for knowledge socialization and combination, and a team atmosphere plays an obvious role in improving knowledge creation.(Deng et al., 2020) In high-tech organizations, the organizational climate of knowledge work team is an important factor affecting the effectiveness of knowledge work team. Interpersonal relationship climate, fairness climate and identity climate positively affect the satisfaction of team members and their commitment to the team. In performance appraisal, individual performance and overall team performance appraisal should be considered comprehensively, Pay attention to the guidance of the team in team management, so that the fair atmosphere can be more perceived, maximize the team output, and then improve the overall performance and project performance.This paper makes the following assumptions based on the aforementioned literature review:

H2: *Project management team climate and project performance have a positive relationship.*

2.2.3 The mediating role of a team atmosphere

In the relationship between project management team stability and project performance, team climate, as an overall cognition inside the project management team, acts as an intermediate. When the stability of the management team is strong, the internal members of the team are more stable, the tacit understanding between team members is higher, the two-way or multi-directional communication between team members increases, and when the team cohesion is strong, the team members have a stronger sense of participation in team tasks, which can improve the team cooperation and communication level and form a positive and good team atmosphere.(White & Lean, 2008) At the same time, improve the team's support, improve the team as a whole, form a positive team atmosphere., and provide positive assistance for each other's work.(Reitano, 2021) In a positive team atmosphere, it is easier to have some informal work discussions, strengthen the emotional communication within the team, establish affinity and a sense of belonging, and the supportive organizational atmosphere of the team is stronger, Improving the creativity of team members. At this time, team members can better cooperate in work, establish closer contacts, maintain work enthusiasm, improve their commitment to work quality, and improve project performance.(Serban & Roberts, 2016)

When the team trust is strong, it is easier for team members to accept each other's new views and form an innovative atmosphere of actively sharing new ideas and methods. To continuously improve the project management mode, the team will boost its innovation support for members and actively discuss new project management ideas. The atmosphere of the invention is highly crucial for the development of a project. Innovation is a source of vigor for team development. A team that ignores method innovation is likely to become inefficient and backward, moving more and further away from the performance target.(Díez et al., 2020) When a team always finds new ideas and methods to solve problems, and team members will provide strong support for the implementation of new methods, the interaction within the team will be strengthened, With the support of an innovative atmosphere, the improvement of project performance will be more significant. When the team's trust is high, the team will also be in a fair atmosphere. In the teamwork, each member expects to be fair. In a fair atmosphere, the work output and efforts of each team member can be scientifically and reasonably

evaluated, the team management information is more transparent, there is no differential treatment among team members, and members have a stronger willingness to communicate, The management structure tends to be more flat, which helps to enhance the work initiative and autonomy of team members and produce a good working atmosphere. (Walker et al., 2021) At the same time, the management team's organizational structure is more transparent, which has a substantial beneficial impact on the team's innovative culture, allowing them to better establish a combined force, enhancing team members' awareness of project performance, and promoting project improvement.

When the turnover intention of team members is large, the stability of the tear becomes worse. At this time, the enthusiasm of team members for work decreases, the long-term tacit understanding and cooperation between members decreases, and the good atmosphere of active cooperation within the team is destroyed, which affects the realization of the final project performance.

As a result, we propose the following hypotheses:

H3a: *Team climate plays a positive intermediary role in the influence relationship between project management team cohesion and project performance.*

H3b: *Team environment plays a beneficial moderating function in the link between project management team trust and project performance.*

H3c: *Team atmosphere plays a beneficial moderating function in the link between project management team turnover intention and project performance.*

2.2.4 The structural equation modeling (SEM)

Structural equation modeling (SEM) alludes to primary examination, covariance, and primary connection investigation, it is broadly utilized in conduct to explore the connection among detectable and idle factors. As a rule, underlying condition displaying has turned into a significant measurable apparatus for concentrating on the connection between possible constructions and noticed markers. SEM is generally utilized in statistical surveying. The reason for SEM is to look at the model to test whether the introduced model matches the information, the estimation model analyzes the connection between the hidden design and the recognizable markers. Simultaneously, the primary model catches the connection between endogenous factors and exogenous factors. Given the exploration content and factors of this examination, this examination is appropriate for examination and investigation utilizing SEM.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter covers population and sample selection, data collection, research methods, and reliability analysis of research instruments. Therefore, the additional information in this chapter is as follows.

3.1 Conceptual Framework

This paper's basic research framework is depicted in the diagram below:

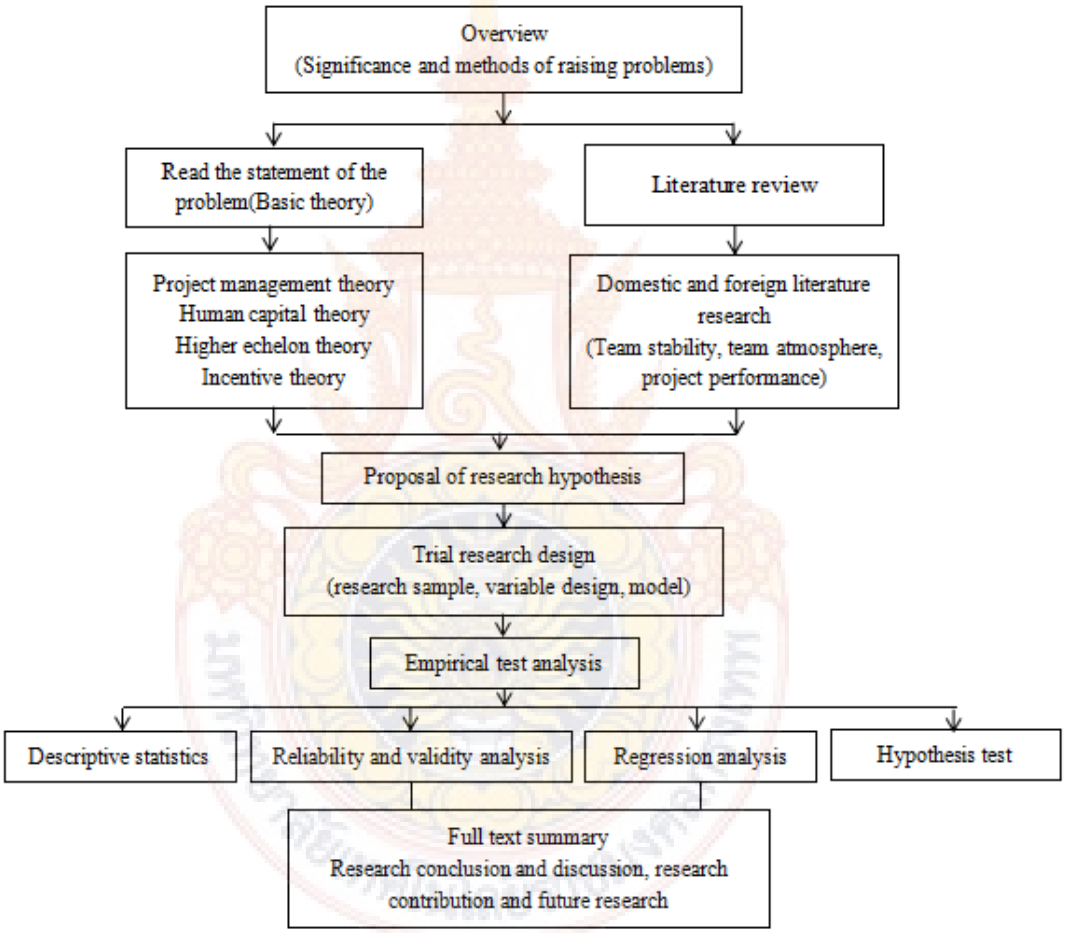

Figure 3.1 Text structure frame diagram

3.2 Research Design

In the preceding literature study, we evaluated relevant research on management team stability, team atmosphere, and project performance, summarized the previous research findings, and laid the theoretical foundation for this research. We developed the conceptual model for this paper, as shown in Figure 2, after significant reading and

learning of past research results.

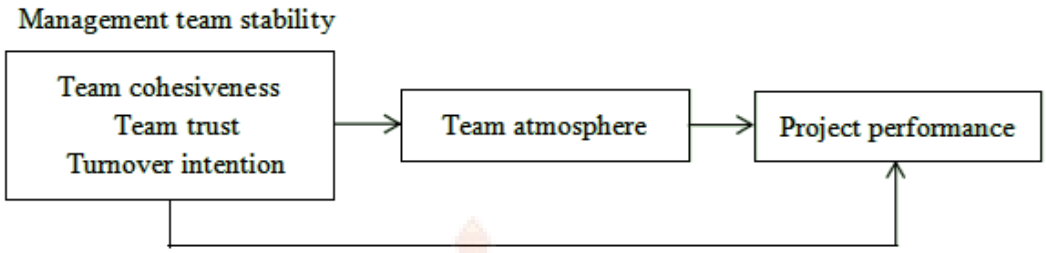

Figure 3.2 Conceptual model of this paper

Based on reading a large amount of relevant literature in this field and analyzing the relationship between the three variables of project management team stability, team climate, and project performance, this paper aims to establish a theoretical model as shown in the figure above to verify the influence relationship between project management team stability, team climate, and project performance. Project management team stability is an independent variable in the model suggested in this research, project performance is a dependent variable, and team climate is an intermediary variable.

3.3 Scale Development and Scale Selection

A scale is a measurement tool used in empirical research to determine the quantitative measurement technique of subjective and abstract notions. This chapter creates the team climate scale, then selects and determines the project management team stability and project performance scales, and finally determines the measurement tools used to measure variables in this paper based on reading a large amount of relevant literature at home and abroad and conducting field research.

3.4 Development of Team Climate Scale

In the research on a team atmosphere, compared with western countries, domestic enterprises have more obvious local characteristics, so the factor composition of team atmosphere will be different. The research on team atmosphere in China is relatively late and is still in the preliminary stage. Some scholars study team atmosphere from the perspective of innovation but do not make further research on other aspects, although some researchers have altered team climate scales for various businesses, they are not part of the project management team. There is no appropriate and authoritative team climate scale found in relevant studies at home and abroad, according to a thorough review of the literature. As a result, this study will draw on both domestic and international experience, begin with the realities of domestic businesses, and use empirical methods to investigate the constituent factors of the project management team atmosphere.

3.4.1 Exploratory collection of scale items

The participants in this study are project management teams from various sectors. They have high-quality management and higher education. They place a greater emphasis on soft work variables such as team dynamics. To begin, we chose 21 project management teams from various sectors. During field visits, we first introduced them

to the concept, research status, research significance, and division of various team atmosphere measurement variables, and then asked them to answer the following questions: "How do you think the team atmosphere of a project management team can be measured? For each aspect, you can list some words you think are more suitable for the description" Finally, the gathered surveys are summed up, all responses are refined, and the most high-frequency terms are kept, yielding 12 words that describe the project management team's atmosphere, such as communication, cooperation, encouragement, and creativity. These projects are categorized and summarized into three categories: communication and collaboration, support for innovation, and team equity.

3.4.2 Scale preparation and subjects

The scale is constructed using the items obtained by the questionnaire and references to other research material, and relevant specialists are invited to examine and evaluate the scale in advance to avoid ambiguous or unrealistic descriptions. Likert's five-point scale approach is used to score the scale. Each item is a statement sentence, and the investigators can choose from five-degree options: 1-very disagree, 2-relatively disagree, 3-generally agree, 4-relatively agree, 5-very agree. Table 3.1 shows how the items are sorted in random order.

Table 3.1 Measurement of team atmosphere

Communication & Collaboration	Team members are willing to assist each other with their work in a constructive way
	There is no sentiment of inadequate communication inside the team because the communication atmosphere is peaceful and fluid
	Actively share fresh project management ideas with the rest of the team.
	In addition to work, team members maintain personal relationships
Innovation support	The team aggressively encourages and supports each member's expression of fresh ideas
	The team will have a set time and location for its invention sessions
	The team has a great evaluation and guarantee mechanism in place to mitigate the risk of new methods
Team equity	For each member's work output, the team has a scientific and appropriate evaluation mechanism
	Everyone on the team is treated equally and without prejudice
	The outcomes of each team member's efforts are highly regarded

The project management team is the primary research subject of this study. As a result, the scale's subjects are mostly team members with management expertise. A total of 24 project management teams from various industries were chosen at random, with 10 and 14 management teams receiving outstanding and average project performance ratings, respectively. The scale was given to the above teams, and 157 questionnaires

were distributed in total, with 129 valid questionnaires gathered.

3.4.3 Exploratory factor analysis

Exploratory factor analysis is used to study the scale's internal factor structure, based on the prior exploratory theoretical conception. Before conducting exploratory factor analysis, the KMO and Bartlett sphericity tests must be completed. When the KMO value is greater than 0.6 and the P-value for Bartlett sphericity is less than 0.05, the data is eligible for factor analysis. The scale data will be subjected to the KMO and Bartlett sphericity tests. As indicated in table 3.2, the results indicate that it is suited for factor analysis.

Table 3.2 Conditional values of team atmosphere factor analysis

KMO		0.873
Bartlett sphericity test	Approximate chi square	754.435
	df	45
	P value	0

The test data is factored in based on the assumption that the data is acceptable for factor analysis. Using the method of principal component extraction, the principle of extracting eigenvalues is greater than 1. Through the observation of project commonality, the factors with load levels greater than 0.4 are taken to obtain three-factor solutions, and the interpretation rate of cumulative variance is 72.87%, The preliminary factor analysis results show that only two items are included in the second factor and the third factor. Because the number of items included is too small, it is not suitable to be used as a factor. Combined with the above analysis of items, after careful consideration, these four items are deleted, and the factor analysis is continued for the items retained through the screening of factor analysis. Finally, a factor is discovered, and the cumulative variance interpretation rate (after rotation) is 74.65%, which is higher than 50%. As a result, the information from the study items can be efficiently extracted, and the scale has strong structural validity. Finally, six valid elements for the team climate scale are identified, and the results of the factor analysis are displayed in table 3.3:

Table 3.3 factor analysis of team atmosphere

Item number	Factor one	Common degree	Eigenvalue	Cumulative variance interpretation rate	P value
Q1	0.874	0.765			
Q2	0.851	0.739			
Q3	0.872	0.753	4.607	74.65%	0.000
Q6	0.864	0.742			
Q9	0.889	0.804			
Q10	0.886	0.789			

Table 3.3 shows that there is one factor in the structural dimension of the project

management team atmosphere, that the factor load values on the six items are more than 0.4, and that the cumulative variance interpretation rate (after rotation) is 74.65%, which is satisfactory.

3.4.4 Reliability analysis

Cronbach's alpha is used to investigate the internal consistency of the scale. The results are shown in Table 3.4

Table 3.4 internal consistency analysis of team climate scale

Factor dimension	Reliability index coefficient	Number of items	sample size
Team atmosphere	0.936	6	129
Total amount table	0.936	6	129

The internal consistency reliability coefficient of the team climate scale is strong, meeting the standard of 0.7, as shown in table 3.4. As a result, the team climate scale is quite reliable.

The team climate scale was subjected to exploratory factor analysis and reliability study after it was distributed and recovered. The results demonstrated that the scale's structural dimension was stable and clear, the index data was good, and the test results were effective and dependable, validating the theoretical concept and completing the project management team climate scale's design.

3.5 Selection of Team Stability Scale

3.5.1 Selection basis

At the moment, the stability index Si is mostly used to assess team stability, that is, the influence of a change in the number of executives on the management team's stability. This study takes a thorough look at team stability. This work selects team cohesion, trust, and turnover intention as three variables to measure team stability by referring to a significant number of local and foreign literature and prior research results.

There are single-dimensional notions and multi-dimensional concepts for measuring team cohesion. Individuals receive greater attention than the entire team in a single dimension, but it is easy to distinguish between team performance orientation and team standards. Emotional cohesion, team attraction to persons, and task-oriented cohesion are all multi-dimensional notions. Sharing values and other elements can better reflect the essence of the group, but they are easily mistaken with team performance and team norms. As a result, when doing research, we should carefully select the team cohesion measure that best suits our needs. To minimize confusion between the ideas of team performance and team norms, this study uses Cheng Weibo's (2014) scale. The scale is taken from Lee et al(2011) .'s team cohesiveness scale and is extensively used in team research.

In terms of the turnover intention scale, we picked FARH et al. (1998)'s turnover intention scale, which is a standard scale for assessing team turnover intention, has been frequently used in team turnover research and has been shown to have strong reliability and validity in prior studies. We used the Fan Xingju et al. (2014) scale, which was established by Patrick Lencioni, to measure team trust (2002). When assessing trust, numerous factors are taken into account, including whether team members actively seek aid from others, if there are total barriers to passing overwork, and whether team

members can independently remind each other during work. It takes a more comprehensive look at the team's level of trust. The empirical results suggest that the scale is both reliable and valid.

3.5.2 Determination of scale

After sorting out the scale and its items selected by us, a total of 16 items are finally prepared. The specific scale is shown in table 3.5:

Table 3.5 management team stability scale

Dimension	Concrete problems
Team cohesiveness	A1 I genuinely feel like I'm a part of the team. A2 We work together as a team to attain our performance objectives. A3 In general, the team members are quite helpful. A4 In general, the team members are pretty friendly A5 In general, the team members are quite cooperative.
Turnover intention	A6 I consider quitting my current employment regularly A7 In the coming year, I may look for a new employment A8 I'm going to start asking around to see if anyone knows of any other job openings
Team trust	A9 The majority of team members are willing to recognize their flaws and errors. A10 The majority of team members will actively seek assistance from others. A11 The majority of members appreciate the focus on their areas of responsibility. A12 If there are any issues at work, everyone will remind one another. A13 The majority of team members are willing to provide comments and assistance to others. A14 Face to face meetings will be organized for communication when necessary A15 Team members cherish collective meetings or other opportunities for teamwork A16 Be sure that the preliminary work has been well completed by other members during work communication

3.6 Selection of Project Performance Scale

3.6.1 Selection basis

The success of a project is linked to the success of the organization. The achievement of project functional indicators is referred to as this. The measuring of project performance and the measurement of team performance are frequently misconstrued. Some researchers classify project performance into three categories: process learning, stakeholder performance, and quality performance. However, the process of learning performance does not match the findings of our study. Some researchers divide project performance into characteristics such as overall project performance and intended use of the project, however, this split is rather broad. This

study follows Kene's definition of project performance and argues that success is a result of hard work. As a result, the scale for project performance used in this study is the one developed by Akintoye and McIntosh and used by Wang Senhao and Le Yun (2014) to explicitly measure the management results of the project management team on project performance. It assesses project success from two perspectives: project performance and stakeholder satisfaction, which includes project progress, quality, and cost claims, as well as stakeholder satisfaction. This scale has strong reliability and validity, according to empirical study.

3.6.2 Determination of scale

After sorting out the scale and its items selected by us, a total of 6 items are finally prepared. Table 3.6 shows the specific scale:

Table 3.6 project performance scale

Dimension	Specific problem items
Project performance	C1 The project is or will be finished on time C2 During the project, there were no serious quality issues C3 The project's cost is within acceptable limits C4There are rarely claims or lawsuits amongst participants during the project's deployment C5 It was recognized or affirmed by other project participants once the project was completed

3.7 Empirical design

3.7.1 Overall design idea

After introducing the research background and significance of this paper, and combining the previous research results, we analyzed the relationship between the three variables of project management team stability, team atmosphere, and project performance, and proposed a conceptual model of the influence between the variables. We shall proceed to the empirical study stage based on the aforesaid sound theoretical analysis. The empirical research stage of this paper is divided into five parts. First, determine the tools and methods used for data analysis in this paper. Second, define the research variables and measure the variables using the scale designed and selected in Chapter 3 to realize the quantitative expression of variables. Third, preliminarily design the scale questionnaire required in this paper, Determine the basic sections and problem distribution of the questionnaire. Fourth, conduct a pre-investigation on the initial questionnaire, find out the loopholes of the questionnaire and solve them in time to form a formal questionnaire. Fifth, start the formal investigation based on the formation of the formal questionnaire, distribute and recover the questionnaire to the research-oriented groups, and finally according to the recovered effective questionnaire. Data analysis software is used to statistically examine the data, confirm the study hypothesis,

and reach a conclusion.

3.7.2 Selection of data analysis tools and methods

The data in this study are statistically analyzed using the SPSS26.0 data analysis software. The following are the data analysis methods:

(1) Descriptive statistical analysis

Descriptive statistics describe the characteristics of sample data through tables, classifications, and graphics. It is used to count the basic information of the sample, such as the occupation, enterprise nature, and employment years of the investigated group. Through the statistical description of the data, we can understand the distribution of the sample, so that we can better understand the basic situation of the investigated group.

(2) Reliability analysis

The term "reliability" refers to the consistency of results achieved when the same method is used to measure the same thing repeatedly. Any type of measurement necessitates the presence of reliability. It is used to determine whether the sample's answer result is reliable and whether there is a genuine response. The more reliable the test, the more trustworthy the result. The reliability coefficient approach is utilized to evaluate the reliability in this paper. Cronbach's alpha is used to determine the level of reliability. When the Cronbach coefficient is more than 0.7, it indicates a high level of reliability. If the Cronbach coefficient is less than 0.6, it indicates a low level of reliability. The Cronbach coefficient is used in this study to assess the consistency of management team stability, team atmosphere, and project performance scale.

(3) Validity analysis

The validity test is used to verify whether the developed items are acceptable and can successfully reflect the researchers' research aims. Content validity analysis and structural validity analysis are the two types of validity analysis. In terms of structural validity, this paper employs factor analysis to identify and extract factors with eigenvalues greater than 1. The factor load coefficient of the item on the corresponding factor must be greater than 0.4, after which the factor is named based on the load and meaning, and the validity analysis is completed.

(4) Regression analysis

Regression analysis is a statistical analysis method that uses data statistical analysis to discover the quantitative relationship between variables. This study employs the linear regression approach to identify the influence link between the three variables based on component analysis, verify the research hypothesis given earlier, and provide support for this paper's theoretical research.

3.7.3 Variable definition and measurement

(1) The project management team's stability. The project management team, excluding the project management office, refers to the people who conduct various management functions in project management, such as planning, organization, and control. There are two types of team stability: broad and narrow. Team stability, in its broadest definition, refers to a condition in which the number of team members, team

cohesion, and team trust is reasonably stable, and team members have no plans to quit. In a strict sense, it refers to a circumstance in which members of the project management team refuse to depart. Currently, the stability index Si is mostly used to assess team stability, that is, the influence of a change in the number of senior executives on the management team's stability. To measure the team stability for the research topic of this work, the project management team, the project management team chooses three variables: team cohesion, trust, and turnover intention. The scale created by Cheng Weibo (2014) was chosen for this study since it is adapted from Lee et al. (2011)'s team cohesion scale and is extensively utilized in team research. The three characteristics of team stability are discussed in this paper: team cohesion, trust, and turnover intention. In terms of team cohesion, I feel like I'm truly a part of the group, and we all work together to reach our performance objectives. The team members are, on the whole, really helpful. The team members are, on the whole, highly friendly. The six features of extremely cooperative team members are measured. Most team members are willing to admit their flaws and mistakes, most team members will actively seek help from others, most members will welcome others to pay attention to their areas of responsibility, and everyone will remind each other; team trust is based on the fact that most team members are willing to admit their weaknesses and mistakes, most team members will actively seek help from others, most members will welcome others to pay attention to their areas of responsibility, and everyone will remind each other; Three factors are used to assess turnover intention: I frequently ponder quitting my current job; I may find a new career in the coming year, and I plan to begin asking friends and others about different job options;

Table 3.7 Team cohesion

Variable	Item
Team cohesiveness	I genuinely feel like I'm a part of the team. We work together as a team to attain our performance objectives In general, the team members are quite helpful In general, the team members are pretty friendly In general, the team members are quite cooperative

Table 3.8 Turnover intention scale

Variable	Item
Turnover intention	I consider quitting my current employment regularly In the coming year, I may look for a new employment I'm going to start asking around to see if anyone knows of any other job openings

Table 3.9 Team trust measurement

Variable	Item
Team trust	The majority of team members are willing to recognize their flaws and errors.

	The majority of team members will actively seek assistance from others
	The majority of members appreciate the focus on their areas of responsibility
	If there are any issues at work, everyone will remind one another
	If there are any issues at work, everyone will remind one another
	If necessary, face-to-face meetings will be organized for communication
	Team members value group meetings or other opportunities for teamwork
	During work communication, be sure that the preliminary work has been well completed by other members

（2）The common impression of team members about the team environment is referred to as team climate. It will affect team members' behavior after they perceive it. Team climate is not only a set of measured traits that can be readily observed by team members and used to influence the behavior of internal members, but it is also a set of measurable attributes. The research object of this paper is that after the project management team's design is completed, the team members are willing to provide positive assistance for each other's work, the communication atmosphere within the team is harmonious and smooth, and there is no poor communication, the team members actively share new project management ideas, and each member's expression of new ideas is actively enacted. In the team, each member is treated fairly, there is no differential treatment, and the work results of each team member are valued.

Table 3.10 Team atmosphere scale

Variable	Item
Team atmosphere	Team members are willing to assist each other with their work in a constructive way
	There is no poor communication within the team because the communication atmosphere is amicable and easy.
	Actively share fresh project management ideas with the rest of the team
	In the team, each member's expression of new ideas is actively encouraged and supported
	Every team member is treated equally and without prejudice
	The outcomes of each team member's efforts are highly regarded

(3) The achievement of project functional indicators is referred to as project performance. It is a crucial aspect of organizational success. It is the project completion that management team members have eventually achieved via their efforts. Environment, opportunity, reward, individual ability, and other factors all have an impact on success. Objective elements include the environment and opportunity, whereas subjective factors include the incentive and individual ability of members. Financial and non-financial effect indicators are the most common metrics used to assess project performance. In this paper, project performance is measured using a

combination of the two methods, based on the following criteria: the project is completed or will be completed on time, the project has not had major quality accidents, the project cost is within the control range, and there are few claims or lawsuits between the participants during the project implementation.

Table 3.11 project performance scale

Variable	Item
Project performance	The project is on track or will be on track
	The project has not had any severe quality issues
	The project's cost is within acceptable limits
	There are rarely claims or lawsuits between the participants during the project's implementation
	It was recognized or affirmed by other project participants once the project was completed

3.7.4 Questionnaire design principle and process

We begin designing the questionnaire required for this study after the scale is finalized, gather data by issuing and recovering the questionnaire, and then conduct statistical analysis to test the stated theoretical hypothesis. The questionnaire's scoring system is based on a 5-point Likert scale. There are five answers for each item: 1-strongly disagree, 2-strongly disagree, 3-generally agree, 4-relatively agree, 5-strongly agree. The higher the score, the more it corresponds to the question's description. In the data analysis, the reverse questions are processed. The final questionnaire is divided into four sections:

Part I: the fundamentals The basic information section of the questionnaire is primarily used to research the industry, type of the business, years of work, and date of inception of the management team to have a better understanding of the filler's background;

Part II: The project management team's stability measurement scale. In this research, three elements of management team stability are examined: team cohesion, team trust, and turnover intention. The scale refers to the scale on team cohesion, turnover intention, and team trust prepared by Cheng Weibo, FARH, et al., fan Xingju, etc., with a total of 16 items;

Part III: team climate scale, which uses the measurement scale designed above to measure the team climate of the project management team, with a total of 6 items;

Part IV: project performance scale. The project performance scale constructed by Wang Senhao and Le Yun (2014) is reflected in two aspects: project performance and stakeholder satisfaction. Project performance is evaluated from four aspects: project progress, quality, cost, and claim. Stakeholder satisfaction is evaluated by whether the project is affirmed by other participants after the completion of the project. There are five items on the scale.

3.7.5 Small sample pre-survey and questionnaire modification

To minimize certain ambiguity and structural problems in the questionnaire utilized in this study, it was redesigned after the preliminary design, which may cause

confusion to the filler and affect the final recovered data, we consulted experts in this field to review the initial questionnaire, and then modify and improve it according to expert opinions. Although several faults in the questionnaire were addressed following the assistance of experts, we conducted a small-scale pre-survey with the amended original questionnaire to make the questionnaire more scientific and reasonable and avoid big errors in the official survey. 40 people have completed the pre-survey. The pre-survey group is similar to the formal group, and the survey procedure is the same. Field interviews are utilized throughout the survey to find more questions in the questionnaire and gain feedback in time to answer them. Through the pre-survey, we found that there are two main problems in the initial questionnaire. The first is that some items in the questionnaire are easy to cause ambiguity so that the respondents can not answer according to their real situation; Second, the layout of the questionnaire is unreasonable and too lengthy, which is easy to causes the weariness of the respondents. According to the two problems found in the pre-survey and the respondents' feedback, the questionnaire is modified, and finally, a questionnaire for formal investigation and research is formed.

3.7.6 Questionnaire distribution and recovery

To acquire the data for this study, the researchers used a questionnaire survey method. The questionnaire survey method is widely used in the social survey and has been widely used in surveys at home and abroad. Compared with the interview method, the questionnaire survey method has the advantages of strong controllability, integrity, and detailed content, and the collected information is more reliable, The types of questionnaire design can be divided into the closed questionnaire and open questionnaire. The questionnaire designed in this paper is a closed questionnaire, which is conducive to the filling in-person to correctly understand and fill in the questions. At the same time, it also saves the filling in person's time and helps to improve the questionnaire response rate, to carry out data statistical analysis on the collected information, In the process of the questionnaire survey, we follow the principles of questionnaire design, that is, voluntariness, possibility, objectivity, and necessity, to make the answer results of the questionnaire close to the real situation of the respondents to the greatest extent and express their real ideas.

Online and offline methods are comprehensively considered for the distribution of questionnaires. Respondents are sent electronic questionnaires via the internet technique. The online research platform has many restrictions on questionnaire filling to ensure that each questionnaire is filled in by different respondents and can only be submitted once the questionnaire is completed; the offline method is to locate the object of our research in the office buildings of some businesses, specifically the project management team, and then send them a paper questionnaire to fill out. Both online and offline forms of research take into account the respondents' educational backgrounds, age, team size, and other factors when distributing the questionnaire, to make the information more comprehensive and the sample more authentic, and the questionnaire is distributed and filled out anonymously to ensure confidentiality. It took four weeks to finish the questionnaire survey. Through the questionnaire recovery procedure, a total of 203 samples were recovered, with 35 invalid questionnaires being discarded after screening and 168 valid questionnaires being obtained at the end, accounting for 82.76 percent of the total questionnaires.

CHAPTER 4
DATA ANALYSIS

4.1 Descriptive Statistics

Through questionnaire distribution and recovery, a total of 203 questionnaire samples were collected. After evaluating the questionnaire data, 35 invalid questionnaires were eventually deleted, leaving 168 valid surveys, accounting for 82.76 percent of the total questionnaires. The following are the results of 168 valid samples:

Table 4.1 descriptive statistical analysis of samples

	Classification index	Sample size / person	Scale /%
Industry	primary industry	24	14.29
	the secondary industry	65	38.69
	the tertiary industry	79	47.02
entire period of actual operation	1-3 years	72	42.86
	4-6years	50	29.76
	7-9years	27	16.07
	More than 9 years	19	11.31
Nature of enterprise	state-owned enterprise	46	27.38
	Joint venture / foreign capital	33	19.64
	privately operated	89	52.98
Management team size	Less than 5 persons	36	21.43
	6-10 persons	53	31.55
	11-15persons	41	24.40
	16-20persons	21	12.50
	More than 20 people	17	10.12
Team establishment time	Within 5 months	31	18.45
	6 months - 1 year	59	35.12
	1-3 years	51	30.36
	More than 3 years	27	16.07

The fundamental information of the effective questionnaire respondents in this study was subjected to descriptive statistical analysis. The questionnaire respondents' businesses were divided into three categories: primary, secondary, and tertiary industries, with the tertiary industry accounting for 47.02 percent of respondents, and the primary and secondary industries accounting for 14.29 percent and 38.69 percent of respondents, respectively. The number of years people who complete the effective questionnaire have been employed varies as well, ranging from one to more than nine. 42.86 percent, 29.76 percent, 16.07 percent, and 11.31 percent of the total population, respectively, are aged 1-3 years, 4-6 years, 7-9 years, and more than 9 years. People who fill in different years make up the bulk of those who do so, with only a small percentage putting in different years. Private enterprises account for 52.98 percent of the applicant's business, state-owned businesses account for 27.38 percent, and joint

ventures/foreign businesses account for 19.64 percent, all of which are widely spread. Projects with 6-10 people account for 31.55 percent of the project management team to which the applicant belongs, projects with 11-15 people account for 24.40 percent, and projects with more than 20 people account for 10.12 percent. In terms of project management team formation time, 18.45 percent of teams were formed in less than 5 months, 35.12 percent in 6 months to 1 year, 30.36 percent in 1-3 years, and 16.07 percent in more than 3 years.

4.2 Reliability Analysis and Validity Analysis

4.2.1 Reliability analysis

The validity and reliability of the scale are examined in this section. If a scale has adequate reliability and validity, the results of later data analysis will be more accurate, which is beneficial to the verification of research hypotheses and conclusion analysis.

（1）Analysis of the management team's stability measurement index's reliability The project management team's stability is split into three categories in this study: team cohesion, turnover intention, and team trust. The SPSS 26.0 data statistical analysis software is used to examine the reliability of the relevant items of these three variables. Table 4.2 displays the test results. The Cronbach's alpha values for the three scales are 0.933, 0.930, and 0.960, respectively. The results pass the reliability test with a score of 0.7. The entire team stability scale's Cronbach's alpha value is 0.810, which also

meets the research level. This study verified the questionnaire through pilot testing. The entire pre-test had 168 subjects, and the survey data was analyzed through EFA.

Table 4.2 Internal consistency reliability analysis of team stability scale (N = 168)

Factor dimension	Reliability index coefficient	Number of items
team cohesiveness	0.933	5
Turnover intention	0.930	3
Team trust	0.960	8
Total amount table	0.810	16

（2）Analysis of the reliability of team climate measurement indicators

The team climate scale's reliability is investigated, and the results are presented in Table 4.3

Table 4.3 Internal letter reliability analysis of team climate scale (N = 168)

Factor dimension	Reliability index coefficient	Number of items
Team atmosphere	0.944	6
Total amount table	0.944	6

As indicated in the table above, the team climate scale's reliability test result is 0.944, and the dependability level is good.

（3）Analysis of project performance scale reliability

The project performance scale's reliability is investigated, and the results are presented in Table 4.4

Table 4.4 Internal consistency reliability analysis of project performance scale (N = 168)

Factor dimension	Reliability index coefficient	Number of items
project performance	0.904	5
Total amount table	0.904	5

The reliability test result of the team climate scale is 0.904, and the dependability level is good, as shown in the table above.

4.2.2 Validity analysis

In a questionnaire survey, it's common to check the validity of the questions to see if they're scientifically sound and accurately reflect the researchers' research goals. Validity can be divided into two categories: content validity and structure validity. Content validity through the text describes the scale is valid, test content is in line with the requirements, the questionnaire design is in line with the research purpose and requirements, whether or not recognized by experts, after the completion of the reference of the design is what, what is professional, the validity of words, the reliability, and validity of the test content is in line with the research purpose and requirements. In terms of the content validity of the questionnaire, whether the measurement scale

adopted was based on and referred to a large number of domestic and foreign literature studies and mature scales, and was evaluated by experts to ensure that the items were reasonable. Therefore, the scale in the study reached a high level of validity. The structural validity test is the most used approach for evaluating the questionnaire scale. Factor analysis, which analyzes the internal logical structure of items, is the most often employed method in the examination of structural validity. This method is particularly rigorous and reliable in validity testing because it is not only supported by theoretical reasoning but also tests the soundness of the theory using practical evidence. Two indicators, ave (mean-variance extraction value) and Cr, are employed to verify aggregate validity in the structural validity test (combined reliability). The aggregate validity is high when the ave value is greater than 0.5 and the Cr value is greater than 0.7. Factor analysis is used in this study to test the questionnaire's structural validity and scientific rationality.

(1) Project management team stability scale structural validity analysis

Before moving on to the structural validity analysis of the questionnaire data, the KMO and Bartlett sphericity tests are employed to assess whether the sample data are acceptable for the next factor analysis. When KMO is greater than 0.6 and the p-value for Bartlett sphericity is less than 0.05, factor analysis is appropriate. The final test results are shown in the table below. The KMO value for the validity test is 0.921, and the Bartlett sphericity test is significant, as shown in Table 4.5. (the significant probability is 0.000). According to factor analysis criteria, the data in this study's sample is eligible for factor analysis.

Table 4.5 Factor analysis of management team stability measurement indicators

Factor	Measurement item	Factor load	Eigenvalue
Team stability	A1	0.864	4.127
	A2	0.819	
	A3	0.848	
	A4	0.858	
	A5	0.860	
Turnover intention	A6	-0.834	2.583
	A7	-0.844	
	A8	-0.813	
Degree of trust	A9	0.849	6.195
	A10	0.852	
	A11	0.877	
	A12	0.857	
	A13	0.810	
	A14	0.861	
	A15	0.859	
	A16	0.828	
KMO	Approximate chi square	Significance	Cumulative variance interpretation rate (after rotation)
0.921	2670.227	0.000	80.65%

Table 4.6 Factor analysis of management team stability measurement indicators

Factor	Mean variance extraction AVE value	Combined reliability CR value
Team cohesiveness	0.737	0.933
Turnover intention	0.815	0.930
Degree of trust	0.753	0.961

The scale is subjected to factor analysis, with the factors extracted using the principal component approach. The eigenvalue must be bigger than one to be extracted. The results of the analysis are shown in Table 4.5. The factor analysis results are consistent with the original scale's dimension division of management team stability, and the corresponding commonality values of all research items are greater than 0.4, indicating that the research item information can be effectively extracted, as shown in Table 4.5. The eigenvalues of the three components are more than 1, namely 4.127, 2.583, and 6.195, respectively, and the cumulative variance interpretation rate is 80.65%, showing that the three factors properly explain the management team's stability. The average values for these three components are larger than 0.5, and the CR values are also greater than 0.7, as shown in Table 4.6. As a result, the data aggregation validity of this analysis is good.

（2）Analysis of the structural validity of team climate measurement indicators

The structural validity of the team climate scale is determined using the KMO test and the Bartlett sphericity test. The results of the tests are shown in the table below. The KMO score for the validity test is 0.904, and the Bartlett sphericity test is significant,

as shown in Table 4.7. (significant probability is 0.000). According to factor analysis criteria, the data in this study's sample is eligible for factor analysis.

Table 4.7 Factor analysis of team climate measurement indicators

Factor	Measurement item	Factor load	Eigenvalue
Team atmosphere	B1	0.883	4.724
	B2	0.904	
	B3	0.885	
	B4	0.896	
	B5	0.883	
	B6	0.872	
KMO	Approximate chi square	Significance	Cumulative variance interpretation rate (after rotation)
0.904	905.749	0.000	79.64%

Table 4.8 Factor analysis of team climate measurement indicators

Factor	Mean variance extraction AVE value	Combined reliability CR value
Team atmosphere	0.737	0.934

The scale is subjected to factor analysis, with the factors extracted using the principal component approach. The eigenvalue must be bigger than one to be extracted. Table 4.7 shows the outcomes of the analysis. As shown in table 4.7, the results of factor analysis are consistent with the dimension division of team atmosphere in the original scale, and the corresponding commonality values of all research items are greater than 0.4, indicating that the information in research items can be effectively extracted. One factor has an eigenvalue greater than 1, 4.724, and a cumulative variance interpretation rate of 79.64 percent, indicating that it can better explain team dynamics. As shown in Table 4.8, the ave value for the factor is greater than 0.5, and the CR value is also greater than 0.7. As a result, the data aggregation validity of this analysis is good.

（3）Analysis of the structural validity of project performance measurement indicators

The structural validity of the project performance scale is determined using the KMO test and the Bartlett sphericity test. The results of the tests are shown in the table below. The KMO value for the validity test is 0.827, and the Bartlett sphericity test is

significant, as shown in Table 4.9. (significant probability is 0.000). According to factor analysis criteria, the data in this study's sample is eligible for factor analysis.

Table 4.9 Factor analysis of project performance measurement indicators

Factor	Measurement item	Factor load	Eigenvalue
Project performance	C1	0.866	3.630
	C2	0.844	
	C3	0.847	
	C4	0.810	
	C5	0.892	
KMO	Approximate chi square	Significance	Cumulative variance interpretation rate (after rotation)
0.827	547.888	0.000	72.61%

Table 4.10 Factor analysis of project performance measurement indicators

Factor	Mean variance extraction AVE value	Combined reliability CR value
Project performance	0.652	0.9

The scale is subjected to factor analysis, with the factors extracted using the principal component approach. The eigenvalue must be bigger than one to be extracted. Table 4.9 shows the results of the analysis. The factor analysis results, as shown in table 4.9, are consistent with the original scale's dimension division of project performance, and the corresponding commonality values of all research items are greater than 0.4, indicating that the information contained in research items can be effectively extracted. One factor has an eigenvalue greater than 1, 3.630, and a cumulative variance interpretation rate of 72.61 percent, indicating that it can better explain team dynamics. As indicated in Figure 4.10, the factor's average value is larger than 0.5, and the CR value is also greater than 0.7. As a result, the data aggregation validity of this analysis is good.

4.3 Hypothesis Test

To verify the hypothesis test and determine the influence link between independent factors, intermediary variables, and dependent variables, this study used the linear regression approach. The independent variable in this study is the project management team's stability, the intermediary variable is the team climate, and the dependent

variable is project performance. The regression analysis method is used in this paper to see if the causal association between the three variables is significant.

4.3.1 Regression analysis of team stability and team atmosphere

Use team stability as the independent variable and team atmosphere as the dependent variable in regression analysis. Table 4.11 shows the outcomes of the analysis:

Table 4.11 regression results of overall team stability and team atmosphere(N=168)

Dependent variable	Independent variable	Regression coefficient	P	R^2	F
Team atmosphere	Team stability	0.586	0.000	0.129	21.495

*P < 0.05 * * P < 0.01 is the value of T in the brackets.

In linear regression analysis, the R-square value of the model when team stability is used as an independent variable and team atmosphere is used as a dependent variable is 0.129, indicating that team stability can explain 12.9 percent of the change in a team atmosphere. The model passes the F test (F = 21.495, P = 0.000 0.05), implying that team stability affects team atmosphere. In the final particular analysis, the regression coefficient of team stability is 0.586 (t = 4.637, P = 0.000 0.01), showing that team stability will have a considerable beneficial impact on team atmosphere. According to the summary and study, overall team stability will have a considerable beneficial impact on team atmosphere.

4.3.2 Regression analysis of team climate and project performance

For regression analysis, use team atmosphere as the independent variable and project success as the dependent variable. Table 4.12 displays the results.

Table 4.12 regression results of team climate and project performance(N=168)

Dependent variable	Independent variable	Regression coefficient	P	R^2	F
Project performance	Team atmosphere	0.445	0.000	0.336	71.541

*P < 0.05 * * P < 0.01 is the value of T in the brackets.

Table 4.12 reveals that in a linear regression analysis with the team climate as the independent variable and project performance as the dependent variable, the model's R-square value is 0.336, indicating that team stability can explain 33.6 percent of the causes for the change in the team environment. When the f test is applied to the model, it is discovered that it passes the F test (F = 71.541, P = 0.000 0.05). This means that the team climate will undoubtedly affect project performance. In the final specific analysis, the team climate's regression coefficient is 0.445 (t = 8.461, P = 0.000 0.01),

indicating that the team climate will have a significant positive impact on project performance. The hypothesis has been proven.

4.3.3 Regression analysis of team stability and project performance

Use team stability as the independent variable and project performance as the dependent variable in regression analysis. Table 4.13 summarizes the findings:

Table 4.13 regression results of team stability and project performance(N=168)

Dependent variable	Independent variable	Regression coefficient	P	R^2	F
Project performance	Team stability	0.721	0.000	0.289	67.573

*P < 0.05 * * P < 0.01 is the value of T in the brackets.

Table 4.13 in the linear regression study, when team stability is taken as the independent variable and project performance as the dependent variable, the r-square value of the model is 0.289, indicating that team stability can explain 28.9% of the changes in project performance. F test showed that the model was correct (F = 67.573, P = 0.000 0.05). Therefore, team stability must have an impact on the success of the project. In the final specific analysis, the regression coefficient of team stability is 0.721 (t = 8.220, P = 0.000 0.01), indicating that team stability will have a considerable beneficial impact on project performance. Hypothesis H1 is true.

4.3.4 Regression analysis of each dimension of team stability and project performance

Consider each characteristic of team stability as an independent variable and project performance as the dependent variable in regression analysis. Table 4.14 summarizes the findings:

Table 4.14 Regression results of each dimension of team stability and project performance(N=168)

Dependent variable	Independent variable	Regression coefficient	P	R^2	F
Project performance	Team cohesiveness	0.461	0.000	0.345	87.349
Project performance	Team trust	0.398	0.000	0.270	61.467
Project performance	Turnover intention	-0.480	0.000	0.440	130.562

*P < 0.05 * * P < 0.01 is the value of T in the brackets.

Table 4.14 reveals that team cohesion explains 34.5 percent of project performance among the three dimensions of team stability, indicating that there is a link between project performance and team cohesion, and the p-value is less than 0.01. As a result, team cohesion will have a significant positive impact on project performance and can be used as a key motivator. The H1a hypothesis was proven to be correct. The p-value is less than 0.01 and the team trust to project performance explanation degree is 27.0

percent, indicating that project performance and team trust are linked. As a result, team trust has a significant positive impact on project outcomes and can be used as a crucial influencing factor. The H1b hypothesis is indeed correct. The p-value is less than 0.01 and the explanatory degree of team members' turnover intention to project performance is 44.0 percent, implying that project performance and turnover intention are related. As a result, the turnover intention will have a significant negative impact on project

performance, and it can be used to influence project performance as a key factor. Hypothesis H1c is true.

4.3.5 Mediating role of the team atmosphere

Consider each component of team stability as an independent variable, project performance as the dependent variable, and team climate as the intermediary variable when performing regression analysis. Tables 4.15, 4.16, and 4.17 illustrate the results

Table 4.15 Regression analysis results of mediating effect of team atmosphere Table 1 (N = 168)

	Project performance	Team atmosphere	Project performance
Constant	2.251**(12.104)	1.975**(7.473)	1.679**(8.528)
Team cohesiveness	0.463**(9.351)	0.427**(5.886)	0.352**(6.893)
Team atmosphere			0.303**(5.582)
R^2	0.359	0.194	0.485
F value	88.352	35.432	70.489
P	0.000	0.000	0.000

*P < 0.05 * * P < 0.01 is the value of T in the brackets.

Team atmosphere, according to the analysis in table 4.15, is an intermediary factor in the impact of team cohesion on project performance. H3A is presumed to be established.

Table 4.16 Regression analysis results of mediating effect of team atmosphere Table 2 (N = 168)

	Project performance	Team atmosphere	Project performance
Constant	2.572**(13.541)	2.408**(8.924)	1.849**(8.885)
Team trust	0.380**(7.738)	0.346**(4.814)	0.295**(5.941)
Team atmosphere			0.332**(6.641)
R^2	0.282	0.134	0.415
F value	62.452	24.178	61.591
P	0.000	0.000	0.000

*P < 0.05 * * P < 0.01 is the value of T in parentheses.

Team climate, according to the analysis in table 4.16, is a mediator in the impact of team trust on project performance. It is assumed that H3B is true.

Table 4.17 Regression analysis results of mediating effect of team atmosphere Table 3 (N = 168)

	Project performance	Team atmosphere	Project performance
Constant	4.983**(35.739)	4.589**(28.438)	4.136**(15.404)
Turnover intention	-0.474**(-11.415)	-0.480**(-8.251)	-0.392**(-7.987)
Team atmosphere			0.239**(4.166)
R^2	0.452	0.304	0.501
F value	132.452	70.515	78.326
P	0.000	0.000	0.000

*P < 0.05 * * P < 0.01 is the value of T in parentheses.

Team climate plays an intermediary role in the impact of turnover intention on project performance, according to the analysis in table 4.17, and H3C is assumed to be true.

CHAPTER 5
CONCLUSION AND DISCUSSION

5.1 Conclusions

Under the background of the transition from a rapid period to a stable period of economic development, project management ability has become one of the important factors for enterprises to maintain their competitive advantage. More and more enterprises have put forward the concept of cost reduction and efficiency increase, which puts forward higher requirements for the stability of the project management team.

RQ1 refers to whether the stability of the management team has a significant beneficial impact on the project performance. The author found that its path coefficient is 0.721, P=<0.01, which indicates that there is a positive correlation between the stability of the management team and the project performance. The higher the stability of the management team, the better the project performance.

RQ2 refers to whether team cohesion has a substantial impact on project performance. The author finds that there is a connection between team cohesion and project performance, and its path coefficient is 0.461, P<0.01. It can be concluded that team cohesion can be used as a key incentive factor, and team cohesion will have a significant positive impact on project performance.

RQ3 refers to whether there is a connection between team trust and project performance. Through the path coefficient, the author finds that the path coefficient of team trust to project performance is 0.398, P<0.01. Team trust and project performance are interrelated, and team trust can be used as a key influencing factor, indicating that team trust has a significant positive impact on project performance.

RQ4 refers to the significant negative impact of team turnover intention on project performance. Through path analysis, the author found that the explanatory degree of team members' turnover intention on project performance is 44.0%, and the path coefficient of turnover intention on project performance is -0.48, P<0.01, indicating that project performance is related to turnover intention, which can be regarded as an important influencing factor of project performance, and turnover intention will have a significant negative impact on project performance.

RQ5 refers to whether there is a relationship between the atmosphere of the project management team and project performance. Through coefficient analysis, team atmosphere plays an intermediary role in the impact of team cohesion on project performance, with a coefficient of 0.303, P < 0.01. Team atmosphere plays an intermediary role in the impact of team trust on Project performance, with a coefficient of 0.332, P < 0.01. Team atmosphere plays an intermediary role in the impact of turnover intention on project performance, The coefficient is 0.239, P < 0.01, indicating that there is a relationship between the atmosphere of the project management team and the project performance.

In short, the stability of the project management team plays a more and more obvious role in improving the project performance, and its importance is increasing day by day. It is also of great significance to study the impact of the stability of the project management team on the project performance and the specific impact mechanism,

which are some elements that enterprises should pay attention to in the management and operation in the future.

5.2 Results and discussion

5.2.1 Influence of management team stability on project performance

The research results show that team cohesion and team trust in the project management team has a significant positive impact on project performance, while turnover intention has a significant negative impact on project performance. Improve the incentive and promotion mechanisms, establish appealing salaries and benefits, and good team development opportunities for the entire project team, and make the entire project team form a strong cohesion, which is favorable to improving project performance.(Shaik et al., 2012) The level of mutual trust among team members is referred to as team trust. Teamwork is built on the foundation of trust. Team members may fear conflict during the project implementation process if there is a lack of trust among them. In this case, there is a lack of active and in-depth discussion among team members about project implementation. Task-based conflict improves the team's mutual understanding of the project and improves project performance in team relationships.(Bryson & Bromiley, 1993) Team trust has a positive impact on project performance and can help to build trust within the team. First, team leaders should improve their management, deal fairly with team affairs, dare to sacrifice themselves in the face of interests, take the lead in everything, and set an example for the team; Second, to strengthen emotional communication and increase trust, regular team communication activities should be carried out; and third, the management system should be improved. Fair and transparent methods for team promotion, reward, and punishment should be used, allowing each team member's contribution to the project to be seen. Simultaneously, if a team member's behavior is detrimental to the team's image and interests, it will be remedied promptly to maintain a pleasant team environment. Finally, mutual respect and communication, as well as mutual understanding and trust among members, should be emphasized in the project management team. The intention of turnover is a crucial component of team stability. Team members' voluntary departure from their team is referred to as turnover intention, which relates to their next withdrawal behavior after experiencing dissatisfaction. Turnover is a direct effect of turnover intention. The higher a team's turnover intention score, the more unstable it is. Intentional turnover ought to be brought down or kept up at a sensible and predictable level.(Tetik et al., 2019) The observational outcomes show that turnover expectation unfavorably affects project execution; as such, when there is an acquiescence aim in the task supervisory crew and the colleagues change altogether, the solidness of the group will vary. The inferred understanding and participation mode made by colleagues in the drawn-out running are harmed temporarily, and the undertaking system is likewise harmed, however, this isn't true. During the time spent project the executives, and group pioneers ought to focus on the brain science and mental status of colleagues and get their requirements. When team members are discovered to be planning to leave, they should communicate promptly, review the team management and reward and punishment mechanisms, make regular improvements, and select successor members to reduce the team's turbulent period and maintain the management team's stability.

5.2.2 Mediating role of the team atmosphere

According to the statistical data, the empirical results show that the stability of the project management team has a significant impact on project performance, and team atmosphere plays an intermediary role in the three dimensions of management team stability: team cohesion, team trust, and turnover intention.

The team atmosphere is a kind of overall cognition within the project management team. Innovative support in the team atmosphere is the vitality source of team development. An innovative atmosphere is very important for project development.(Dias et al., 2018) A team that doesn't pay attention to method innovation is likely to become an inefficient and backward team, which is farther and farther away from the performance goal. Communication, cooperation, and active participation in the team atmosphere can improve the participation of team members, and the enthusiasm for communication among team members is enhanced. Regular and conscious exchange of work information and development suggestions, especially informal work discussions, can not only strengthen the emotional communication of team members but also help to achieve formal work objectives. In this process, team members can cooperate better in their work, and the atmosphere of active participation makes every member dare to put forward his ideas and be listened to. Every member can fully participate in project meetings and project promotion. When the team has strong cohesion, Team members have the same interests, harmonious relations, mutual care, love, and help, and a greater attraction is formed among team members. At this time, the atmosphere of the team becomes better, and it is easier for team members to form an identity of common interests, which will automatically be transformed into concrete actions to safeguard the interests of the project. The opportunities for team members to interact are increased, and they are more easily integrated, which is conducive to the realization of project performance.(Nasir et al., 2008) When the trust among team members is high and kept in a relatively stable state, it will help to reduce the cost of team communication, improve the communication efficiency, turn the team atmosphere into an atmosphere of mutual trust, improve the degree of mutual assistance among team members, give feedback and help to each other, and spend time and energy on solving practical problems, which is more conducive to the improvement of project performance.(Anholon & Sano, 2016) When team members tend to leave, the team will be in great turmoil. In a short time, the tacit understanding and cooperation mode formed by team members in the long-term running-in will be destroyed, and the atmosphere of harmonious cooperation among team members will be destroyed. There may also be relationship conflicts that will further make the team atmosphere disharmonious, which is not conducive to team collaboration and task completion, and the project progress will be affected, as well as the project performance will be negatively affected.

5.3 Limitations

The research of this paper still has some limitations and needs to be improved. (1)In the process of statistical data, the sample size is small. Although the final data statistical findings match the needed level of statistical significance, reliability, and validity, the number of samples contained in data statistics is still a long way from that of big samples, therefore there may be some flaws in the final data statistical results; (2)This

study only considers and analyzes the relationship among project management team stability, team climate, and project performance. Other possible variables are not taken into account and then build a model. Therefore, it is possible to ignore other variables in the model and their potential impact relationship.

5.4 Research Contributions

This study proves that the three dimensions of project management team stability do have a significant impact on project performance, and team climate plays an intermediary role in the relationship between team cohesion and project performance, team trust, project performance, and turnover intention and project performance. The research results of this paper provide a meaningful reference for enterprise project management and performance management from both theoretical and practical aspects. From the perspective of theory, the research content of this paper puts forward an innovative perspective. At present, no scholars have studied similar content, which plays an important supplementary role in the research on the relationship between the stability of a project management team and project performance. From a practical point of view, enterprises should pay more attention to the stability of the project management team. When the project management team remains stable, the management team will be more dynamic, the project performance will be improved, and it can help enterprises maintain their competitiveness.

5.5 Practical Contributions

From a practical standpoint, businesses should pay more attention to the project management team's stability. When the project management team is stable, the management team will be more dynamic, project performance will be improved, and enterprises' competitiveness will be maintained.

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APPENDICES

Appendix 1: Questionnaire's Cover Page

Thank you very much for taking the time to complete this survey. To investigate the relationship between project management team stability, team climate, and project performance, and then to examine the relationship between the three variables using survey results to make recommendations for project management stability and project performance improvement. You may need one to five minutes to complete this questionnaire. This questionnaire is part of Thai master's students' research. Please read each question carefully and ensure that all of the responses reflect your true feelings. This information is solely for academic purposes.

Part A: The following questions are to understand some basic information about your industry and project management team. Please answer them according to the actual situation.

1.Your project management team belongs to ( )
□Agriculture, Forestry, Anima husbandry, Fishery
□Manufacturing
□Mining
□Finance
□Construction
□Accommodation and catering
□Transportation, storage, and postal services are all available
□Wholesale and retail
□Services related to information transmission, software, and information technology
□Production and supply of electricity, heat, gas, and water
□Residential services, as well as repair and maintenance, are available
□Health and social services
□Industry of education
□Water conservation, environmental protection, and public facility management
□Real estate is a type of investment property
□Services in scientific research and technology
□Leasing and business services are two of the most common types of leasing

2. The nature of your enterprise is ( )
□private
□joint venture / foreign capital
□state owned enterprise

3.How long have you worked in the current industry ( )
□1-3 years
□4-6 years
□6-8 years
□more than 8 years

4.Your project management team's size is ( )
□fewer than 5 people
□6-10 people
□11-15 people
□16-20 people
□a group of more than 20 persons

5. When did you form your project management team? ()
□within 5 months
□a period of six months to a year
□1 to 3 years
□a period of more than three years

Part B: Stability of project management team: stability scale

(The following items describe some characteristics of the stability of your company's project management team. Please evaluate the degree of agreement on each topic, then give a score. 1-very disagree, 2-relatively disagree, 3-general agreement, 4-comparative agreement, 5-very agreement)

No	Subject	score
TH1	I genuinely feel like I'm a part of the team.	
TH2	We work together as a team to attain our performance objectives	
TH3	In general, the team members are quite helpful	
TH4	In general, the team members are pretty friendly.	
TH5	In general, the team members are quite cooperative.	
MU1	I consider quitting my current employment regularly.	
MU2	In the coming year, I may look for new employment.	
MU3	I'm going to start asking around to see if anyone knows of any other job openings	
RU1	The majority of team members are willing to recognize their flaws and errors.	
RU2	The majority of team members will actively seek assistance from others.	
RU3	The majority of members appreciate the focus on their areas of responsibility	
RU4	If there are any issues at work, everyone will remind one another	
RU5	The majority of team members are willing to provide comments and assistance to others.	
RU6	If necessary, face-to-face meetings will be organized for communication	
RU7	Team members value group meetings or other opportunities for teamwork	
RU8	During work handover, be sure that the preliminary work has been well completed by other members	

Part C: Team climate: team climate scale
(In a specific team situation, each organization member's the direct or indirect perception of the environment.) The following items describe some characteristics of your company's project management team atmosphere. Please evaluate the degree of agreement on each topic and give a score. 1-very disagree, 2-relatively disagree, 3-generally the same Meaning, 4-quite agree, 5-ve agree.)

No	Subject	score
QF1	Team members are willing to assist each other with their work in a constructive way.	
QF2	There is no poor communication within the team because the communication atmosphere is amicable and easy.	
QF3	Actively share new ideas for project management among team members	
QF4	The team aggressively encourages and supports each member's expression of fresh ideas.	
QF5	Everyone on the team is treated equally and without prejudice.	
QF6	The outcomes of each team member's efforts are highly regarded.	

Part D: Project Performance: project performance scale
(Project performance is the final result of the project management team's contribution to the team and the project in the process of managing the project and achieving the team and project objectives. The following topics describe the performance characteristics of your project. Please evaluate the degree of agreement on each topic, and then give a score. 1-very disagree, 2-relatively disagree , 3-general agreement, 4-comparative agreement, 5-very agreement)

No	Subject	score
JX1	The project is on track or will be on track	
JX1	The project has not had any severe quality issues	
JX1	The project's cost is within acceptable limits.	
JX1	There are rarely claims or lawsuits between the participants during the project's implementation	
JX1	It was recognized or affirmed by other project participants once the project was completed	

BIOGRAPHY

NAME	Jindong Xu
ACADEMIC BACKGROUND	Graduated from Sichuan University, China with a bachelor's degree in marketing in 2020 and a Master's Degree in Management at Rajamangala University of Technology Krungthep, Bangkok, Thailand in 2021
EXPERIENCE	Lecturer at Sichuan University and Communications from the year 2008-to 2021