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Professional Management Competence and Role Pressure of Chinese Hospital Executives: Influencing Factors and Outcomes

YANG Xia

Doctor of Management

Supervisors:

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Declaration

I declare that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university and that to the best of my knowledge it does not contain any material previously published or written by another person except where due reference is made in the text.

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Abstract

This thesis answers three research questions: (1) What are the key components of professional management competence and role pressure of Chinese hospital executives? (2) What are their key influencing factors? (3) How do professional management competence and role pressure affect job satisfaction and organization performance? Based on literature review and interviews with hospital executives, we conceptualize hospital executive's professional management competence as consisting of three dimensions: planning ability, control ability, and problem-solving ability. Role pressure includes four dimensions: role conflict, role ambiguity, role overload and role gap. We develop two research frameworks. Framework 1 identifies training, policy uncertainty and leadership as the influencing factors of hospital executive's professional management competence and role pressure. Framework 2 identifies job satisfaction and organization performance as the outcomes of hospital executive's professional management competence and role pressure.

A questionnaire survey was developed and revised based on literature review, interviews with hospital executives, pre-test, and pilot-test. Out of 780 questionnaires that were administered, 343 valid responses were received, representing a response rate of 43.9 %. SPSS version 26 was used to conduct descriptive statistical analysis, reliability and validity tests, and correlation analysis. Regression analyses were used to test the frameworks and hypotheses.

The results suggest that training affects role pressure, but not professional management competence. Policy uncertainty affects professional management competence and role pressure. Leadership affects professional management competence, but not role pressure. Professional management competence affects both job satisfaction and organization performance. Role pressure affects job satisfaction, but not organization performance.

This study makes both theoretical and practical contributions by conceptualizing Chinese hospital executive's professional management competence and role pressure, examining their influencing factors and outcomes, and generating the Competence Scale of Chinese hospital executives.

Keywords: Chinese Hospital Executives, Professional Management Competence, Role Pressure, Leadership, Training, Policy Uncertainty, Job Satisfaction, Organization performance

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Resumo

Esta tese responde a três questões de investigação: (1) Quais são os componentes chave da competência de gestão profissional e da pressão de cargos dos executivos hospitalares chineses? (2) Quais são os seus principais fatores influenciadores? (3) Como é que a competência de gestão profissional e a pressão de cargos afetam a satisfação no trabalho e o desempenho organizacional? Com base na revisão de literatura e entrevistas com executivos hospitalares, conceptualizamos a competência de gestão profissional de executivos hospitalares como composta por três dimensões: capacidade de planeamento, capacidade de controlo, e capacidade de resolução de problemas. A pressão de cargos inclui quatro dimensões: conflito de cargos, ambiguidade de cargos, sobrecarga de cargos e lacuna de cargos. Desenvolvemos duas estruturas de investigação. O *framework* 1 identifica a formação, incerteza política e liderança como os fatores influenciadores da competência de gestão profissional e da pressão de cargos dos executivos hospitalares. O *framework* 2 identifica a satisfação profissional e o desempenho organizacional como os resultados da competência de gestão profissional e da pressão de cargos dos executivos hospitalares.

Foi desenvolvido e revisto um questionário com base na revisão da literatura, entrevistas com executivos hospitalares, pré-teste, e teste piloto. Dos 780 questionários que foram administrados, foram recebidas 343 respostas válidas, representando uma taxa de resposta de 43,9 %. O SPSS versão 26 foi usado para conduzir análises estatísticas descritivas, testes de fiabilidade e validade, e análise de correlação. Foram usadas análises de regressão para testar os *frameworks* e hipóteses.

Os resultados sugerem que a formação afeta a pressão de cargos, mas não a competência de gestão profissional. A incerteza política afeta a competência de gestão profissional e a pressão de cargos. A liderança afeta a competência profissional de gestão, mas não a pressão de cargos. A competência profissional de gestão afeta tanto a satisfação no trabalho como o desempenho da organização. A pressão de cargos afeta a satisfação no trabalho, mas não o desempenho da organização.

Este estudo tem contribuições teóricas e práticas ao conceptualizar a competência de gestão profissional e a pressão de cargos dos executivos hospitalares chineses, examinando os seus factores influenciadores e os seus resultados, e gerando a Escala de Competência dos executivos

hospitalares chineses.

Palavras-chave: Executivos Hospitalares Chineses, Competência de Gestão Profissional, Pressão de Cargos, Liderança, Formação, Satisfação no Trabalho, Desempenho da Organização

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摘 要

本论文研究三个问题：（1）中国医院院长职业化管理胜任能力和角色压力的关键组成部分是什么？（2）它们的主要影响因素有哪些？（3）职业化管理胜任能力和角色压力如何影响院长的工作满意度和医院组织绩效？

基于文献和对院长的访谈，我们用3个维度定义职业化管理胜任能力：计划能力，控制能力和解决问题能力。角色压力包括4个维度：角色冲突，角色模糊和角色量负荷和角色质负荷。我们设计两个研究框架开展研究。研究框架1是选择培训、政策不确定性和领导力作为影响因素，研究如何影响职业化管理胜任能力和角色压力，研究框架2是关注职业化管理胜任能力和角色压力如何影响院长工作满意度和医院组织绩效。

调查问卷根据文献、院长访谈、问卷访谈预测试和实验样本测试确定。在发放出的780份问卷中，回收343份有效问卷，43.9％回收率。我们使用SPSS 26进行描述性统计分析、测量指标信度和效度以及相关性分析，通过回归分析验证假设。

研究结果表明，培训对院长角色压力有影响，但对职业化管理胜任能力没有影响。政策不确定性影响职业化管理胜任能力和角色压力。领导力影响职业化管理胜任能力和角色压力。院长角色冲突、角色模糊和角色质负荷对院长工作满意度有负向影响，角色量负荷对组织绩效有负向影响。控制能力正向影响工作满意度，计划能力和问题解决能力正向影响组织绩效。本文通过对中国医院院长职业化管理胜任能力和角色压力概念做系统定义和测量，并研究其影响因素和结果，对研究和实践有重要贡献，并形成了院长职业化管理胜任能力测量量表。

关键词：中国医院院长，职业化管理胜任能力，角色压力，培训，领导力，政策不确定性，工作满意度，组织绩效

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Chapter 1: Introduction

1.1 Research background

Hospital executives are the strategic decision makers of hospitals. Their professional management is a key factor in influencing hospital performance. Therefore, the professional management of hospital executives has always been a hot topic in China's medical and healthcare system. However, for a long time, the professional competence of Chinese hospital executives has not only been far from satisfactory, but their professional status has also been controversial due to the diversified roles they undertake. This has led to low job satisfaction of hospital executives, which in turn to some extent affects organization performance. The professionalization of Chinese hospital executives began in the 1990s. As early as 1997, *the Central Committee of the Communist Party of China and the State Council's Decision on Health Reform and Development* (The State Council, 1997) clearly states that "we must attach great importance to the training of health management personnel and create professional management teams that are suitable for the development of health services". Since 2017, China's medical reform has entered a new stage. Both the government and hospital executives are under unprecedented pressure. The government once again put the professionalization of hospital executives on the agenda and put forward higher requirements for it. Executives are also more eager to better understand their competence and roles. The background that explains why professionalization of Chinese hospital executives has become the focus of attention has the following two aspects.

1.1.1 Chinese medical reform

In 2009, the Chinese government issued *Opinions of the CPC Central Committee and the State Council on Deepening the Reform of the Medical and Health System* (The State Council, 2009), marking the launch of a new round of healthcare reform, referred to as "New Medical Reform". As the main providers of medical services in China, public hospitals are facing various contradictions and problems. Promoting the reform of public hospitals is one of the five key reforms identified in the new medical reform plan, and the effect of the reform of public hospitals is directly related to the success of the entire medical reform. *The Guidance on the*

Pilot Comprehensive Reform of Urban Public Hospitals (The State Council, 2015) states that the goal of the comprehensive reform of public hospitals is to break down the profit-making mechanism of public hospitals and to build a medical service system with optimized structure and layout, effective coordination and cooperation, as well as a tiered medical diagnosis and treatment system. In this way the public can have easy access to quality and affordable medical service. It was expected that the unreasonable growth of medical expenses would be effectively controlled by 2017, and the growth of total health expenses would be in line with the growth of GDP in the region. To achieve this goal, the Chinese government promulgated a series of policies, among which the zero-drug markup policy had the greatest impact on hospital operations. The drug markup system was adopted as early as 1954. As a kind of compensation mechanism, the drug markup system allows the hospital to add 15% to the wholesale price of drugs so as to make up for the low patient registration fee and insufficient fund for medical technology. It was common for Chinese hospitals to maintain normal operation by "supporting medical service with profit from selling drugs". In 2012, *the 2012 Major Work Arrangement for Deepening the Reform of the Medical and Health System* (The State Council, 2012) stated that the reform of public hospitals is targeted to eliminate drug markup and compensate the hospitals by increasing the price of medical services.

In fact, the compensation that most hospitals receive from higher medical service prices is far from making up for the 15% loss caused by zero drug markup policy, which has led to an unprecedented situation in Chinese medical services: some public hospitals suffered financial deficit as they struggled to maintain normal operation without sufficient government compensation. This phenomenon has continued (Yip et al., 2019). It can be said that the cancellation of drug markup policy marks the beginning of substantive reform of Chinese hospitals, and China's medical reform has entered a new stage targeted at medical service providers. Therefore, the objective of many hospitals has changed from growth to survival, and hospital executives have realized that it is necessary to change the development mode from expansion in size to maintaining cost-effectiveness operations. In this changing environment, the professional competence, and the recognition of the roles of hospital executives who are used to traditional operation mode are not compatible with the requirement of hospital operation in the future. Both the policy requirements at the macro level and the hospital operation at the micro level need hospital executives who have the knowledge of hospital operation and management and who are ready to devote themselves to the hospital management with professionalism.

1.1.2 Challenges of professionalization of Chinese hospital executives

Over the past 20 plus years, the professionalization of Chinese hospital executives has experienced a slow progress. The Chinese government's long-standing approach is to regulate the professional role of the executives through policies, requiring the executives to concentrate on management, and improve the executive's management ability through training. However, the government has ignored the personal career development plan of the executives, resulting in a conflict between the pressure from the government and the motivation of the executives. Such conflict has brought even greater role pressure to hospital executives.

1.1.2.1 The status quo of professionalization of hospital executives in China

In 2014, the China Hospital Association conducted a survey of 145 level 3 hospitals in 27 provinces, municipalities, and autonomous regions in China. The result shows that less than 30% of the 201 executives have their first degree in management and related majors; and 36.5% of the 830 middle-level managers graduated from non-medical professions such as management, economy, law, and social studies. Compared with 10 years ago, the educational background of the executives has no major changes. Most administrative positions in hospitals are held by those who were transferred from medical positions. Most hospital executives are “Having two roles on both shoulders” (administrative and medical roles). Many hospital executives are actually full-time doctors and part-time administrative leaders (China Hospital Association, 2014). In Chinese hospitals, those who are engaged in both hospital management and clinical practice as managers are referred to as “Having two roles on both shoulders”. This phenomenon is also quite common in foreign hospitals, referred to as “wearing two hats” (Blair & Payne, 2000; McConnell, 2008).

There are two reasons behind “Having two roles on both shoulders” which is widespread and persistent. One reason is the selection mechanism of Chinese hospital executives. In China, the career path of hospital executives is generally from ordinary doctors to experts, and then to hospital leaders. Those with professional excellence will be promoted to higher management levels. Most hospital executives have the professional title of chief physician, the senior title representing the leader of a certain medical discipline in the hospital. Some executives are chairmen of the National Academic Committee, or even academicians of Chinese Academy of Sciences. It is a hard decision for them to give up their medical specialty and dedicate themselves wholly to management work. Therefore, the more successful they are in their professional fields, the more difficult for them to experience this career transition. It is natural

for someone to feel comfortable in the domain that he is familiar with and dislike the area that he knows little about.

Another reason is that executives have confusion about their career path. In China, hospital executives are selected and appointed by the superior competent authority, and subject to the tenure system. Each tenure lasts 5 years and executives can serve for 2 consecutive terms. A medical expert who chooses to take a managerial position and puts aside his clinical skills will end up with a dilemma if he has served two terms before reaching the retirement age. There is little room for further promotion, nor does he have the motivation to be transferred to another managerial position of the same level. Yet the executive is no longer competent for the clinical work. Therefore, for the consideration of personal career development, hospital executives generally will not give up their clinical specialty.

1.1.2.2 The challenges of executive's professional management

First, there is a conflict between the roles of medical expert and of professional management. The professional status of hospital executives in China and their career development path both indicate that “having two roles on both shoulders” is a better choice. It seems to make sense to be a full-time doctor and part-time hospital executive. However, when the pressure of hospital operation increases, requiring more time and energy from the executives who bear the responsibility to ensure the survival and development of their hospitals, they need to make a choice between working as part-time hospital executives “having two roles on both shoulders” and devoting themselves to managerial work while giving up their clinical specialty. The conflict between these two roles is increasingly prominent.

Second, there is a conflict between the roles of government official and of professional management. A hospital executive is a government's agent in the hospital. Most Chinese hospital executives also have to play the role of government officials at certain administrative levels. Therefore, it is the hospital executives’ duties to follow government instructions. The effect of hospital government implementation is the important criteria in their performance evaluation. The first principle of running a public hospital is to serve the public good and implement the government instruction unconditionally. In the context of new medical reform, the government has emphasized the public welfare of public hospitals, but the government's grant for the hospital is far from enough to maintain normal operation. Hospitals have to generate enough revenue to maintain the operation. The contradiction between the government's public welfare requirements and the hospital's market-oriented operation is becoming increasingly apparent. How to find a balance between government requirements and

hospital operation has become the biggest challenge for the executives? For example, when the government requires sending medical experts to work in hospitals in less developed regions for a long time, there will be a conflict between the government requirements and the development of hospital clinical departments. In this case, hospital executives face role conflict as a government official and a hospital leader. Sometimes hospitals affiliated to different government agencies may receive different instructions or ambiguous instructions, then the executives will find it more difficult to make a decision.

Finally, the executive's management ability does not match the professional management competence. Whether the executive's management abilities can meet the requirements of hospital's management can be a challenge to executive's professional management. Using strategic tools to develop strategy is an important ability for effective management and the mastery of management knowledge is essential for improving management abilities. Although most hospital executives excel in medical expertise, they lack systematic training of management knowledge and the ability to manage hospitals in the market-oriented environment. According to a survey of hospital executives by China Hospital Association in 2014, the vast majority of respondents (93.5%) believed that their management knowledge and skills are acquired from work experience, and 76.1% from on-the-job training or lectures, 59.7% from academic education such as MBA or other graduate programs, 51.2% from study tours abroad. Due to lack of understanding of the executive's professional management competence, the training is often not well-targeted. Many organizations, such as the Ministry of Health, industry associations, universities, and consulting companies, have provided trainings with different courses and curriculum systems. Executives complained about repetitive training content, incomprehensive coverage, not up-to-date knowledge and lack of focus and consistency (China Hospital Association, 2014). Some executives have realized the problem and therefore have a strong desire to fill the gap, while others are not yet aware of what management abilities they must have in response to the changes and still rely on their past experience to manage hospitals (Burke & Scalzi, 1988; Blair & Payne, 2000; Peirce, 2000; McConnell, 2008; Barber et al., 2014).

1.2 Research dilemma

Many Chinese hospital executives are unprepared for the changes related to the survival and development of hospitals. Therefore, it is urgent to redefine the professional management of hospital executives, analyze their influencing factors and how professional management

competence and role pressure affect the executive's job satisfaction and hospital performance.

The competence of the leadership is a key factor in determining organization performance. The ability of the hospital manager will also determine the performance of the hospital (Schwartz & Pogge, 2000; Savic & Robida, 2013). Studies have shown that competence affects job satisfaction in that it leads to higher job satisfaction. When there is a large gap between the personal ability and the ability required by the job, it will lead to lower job satisfaction. But what abilities should an executive have so as to be competent? There are many researches on the competence of hospital executives. They use different classification methods and choose different samples, so the conclusions of what kind of abilities the executives should have are also diversified. If we take the conclusions of all these researches into consideration, the competence of executive's professional management will be too broad to achieve. Moreover, the same ability is expressed in different ways by different researchers which may cause confusion in research and practice. Therefore, it is necessary to re-explore the dimensions of executive's professional management competence and study how the professional management competence affects job satisfaction and hospital organization performance in the context of new management environment.

Improving the competence of executive's professional management and realizing effective management are emphasized by China's healthcare authority and industries during the medical reform. Training is an effective way to improve management skills and relieve role pressure (Stoller, Berkowitz, & Bailin, 2007). Policy uncertainty is an important part of the external environment in which an organization operates. In China, the impact of policy cannot be ignored, and it is a key consideration in strategic planning of an organization. The uncertainty of policy implementation result, and policy ambiguity will cause role pressure (Hanaki et al., 2016). The executive is the leader of the hospital who influences the performance of employees through leadership, which will in turn affect organization performance (Smith, 2015). Roles are the expectations of the responsibilities born by a certain position, which may come from within or outside the organization. When there is a deviation between expectation and perception, role pressure will emerge, and professionalization is affected. Role pressure includes four dimensions: role conflict, role ambiguity, role overload and role gap (Siegall, 2000). Research shows that role pressures can cause psychological burden on employees. This will lead to a low degree of work engagement, deterioration of relations with colleagues, and even physiological disorder. This will affect job satisfaction, the subjective evaluation of the nature, status, and environment of the work. Generally speaking, the greater the role pressure, the lower the job satisfaction (Rizzo & Lirtzman, 1970; Jackson & Schuler, 1985; Zeira, 1992; Kadir et al., 2017).

It also reduces job performance, which in turn has an impact on organization performance (Burke & Scalzi, 1988).

Compared with Western hospital administrators, Chinese hospital executives have more diversified roles. They are hospital managers, medical experts, as well as government officials. Their roles are diverse, and so are the sources of stress. What are the sources of role pressure? What dimensions does it have? How does role pressure affect job satisfaction and organization performance? These questions are not sufficiently studied yet.

To sum up, faced with the new pressure, neither the government, nor researchers or the executives have a clear understanding of what impact the competence and role pressure have on job satisfaction and organization performance, and how to relieve role pressure and improve the competence. For hospitals to survive and develop in the new situation, it is necessary to establish a framework of influencing factors and outcomes of the professional management competence and role pressure of Chinese hospital executives so as to find the management solution to the problem.

1.3 Research questions

Professional management of hospitals needs competent executives with clearly defined roles, who are motivated to lead the hospital to achieve good performance. In order to understand whether the professional management competence and role pressure of the Chinese hospital executives affect job satisfaction and hospital performance, we need to answer the following questions:

(1) What are the key components of professional management competence and role pressure of Chinese hospital executives?

(2) What are their key influencing factors?

(3) How do professional management competence and role pressure affect job satisfaction and organization performance?

1.4 Research objectives

First, most Chinese studies on hospital executive's professional management choose the executives of public hospitals as the research object. But the research object of this thesis includes the executives of both public hospitals and non-public hospitals. Unlike western developed countries, public hospitals represent nearly 50% of the total hospitals in China but

provide 95% of the national medical service and account for most of the national medical expenses. As the executives of public hospitals that serve 1.4 billion people and provide 95% of total medical service, their professionalization is naturally the focus of many researchers. However, as China's medical and health system reform deepens and the reform of public hospitals is facing many difficulties, their professionalization is also a challenging issue. It is worth noting that, with the support of national policies, by 2015, the number of non-public hospitals has surpassed that of public hospitals for the first time in history, reaching 15,000, and is growing on daily basis. The government has also made it clear that non-public hospitals should be integrated into the national medical service system, so they will inevitably provide more medical services and account for more medical expenses in the future. It is necessary to pay attention to the management level and the professionalization of the executives in non-public hospitals.

Second, the hospital executives been studied in this research include not only president, but also the vice president, the Party secretary and deputy Party secretary. Since 2019, China's public hospitals have generally implemented the executive responsibility system under the leadership of the Party committee. The decision-making mechanism has changed from democratic centralism to a majority voting system. Hospital level leaders (executives) apart from president can also take part in decision-making. Their professional management competence and role pressure will have an impact on the operation of the hospital. The change of the mechanism will transform their professional abilities and roles, which makes this research necessary and relevant.

Third, the research object also includes the deputy positions at hospital level of both administrative functions and party affairs. Generally speaking, the president is in charge of administrative functions, and the Party committee is in charge of party affairs. But there might be transference between these two positions and they often have similar professional background. Therefore, the respondents include president, vice president, Party secretary and deputy Party secretary.

Fourth, the research objects are limited to grade III B or grade II hospitals. They both face competition from larger hospital in the local area and therefore must improve competitiveness through enhanced management. Only in this way can they attract more patients and achieve greater development.

1.5 Research methods

The research methods of this thesis include interviews, and questionnaire survey with statistical analysis.

1.5.1 Interviews

Based on the research topic, in-depth interviews with open-ended questions were conducted with hospital executives. The purpose is to determine relevant variables, dimensions, and the way to represent measurement indicators.

1.5.2 Questionnaire survey

According to the purpose and content of the study, this thesis used the Chinese hospital executives as the research object with no restrictions on geographical areas, local economic level, and demographic characteristics. Executives of grade III Level B or grade II hospitals were selected as part of the sample. Variables, dimensions, and indicators were summarized after literature review, and revised based on the interview results. The content and way of expression of the indicators in the questionnaire were adjusted so as to be respondents friendly.

In order to ensure the quality of questionnaire data, the researcher conducted a pre-test and a pilot test to improve the content of the questionnaire before the formal distribution of questionnaire. After the questionnaire collection, we conducted statistical analysis, including factor analysis and multiple linear regression. Factor analysis is to analyze the reliability and validity of the indicators and confirm the validity of the questionnaire. Multiple regression is to analyze the relationship between dimensions, find out the correlation, and infer the causality based on reasoning.

1.6 Research contributions

The professionalization of hospital executives in China is not a new topic. This research focuses on the competence and roles, explore their dimensions, influencing factors and their relationship with job satisfaction and organization performance. The research has both academic and practical contributions.

1.6.1 Academic contributions

In terms of academic contributions, there are three main points:

First, the concept of professional management of hospital executives in China has been redefined in the context of the current medical environment in China. Previous studies on the dilemma of the professional management of Chinese hospital executives mainly focused more on the impact of rigid human resource policies on career development of hospital executives, and not so much on its mechanisms and contents. From the perspective of competence and role pressure, we propose that professional management competence includes three dimensions: strategic planning ability, control ability and problem-solving ability, and develop the Competence Scale of Chinese hospital executives based on these 3 dimensions. Role pressure includes four dimensions: role conflict, role ambiguity, role overload, and role gap. This is the most important innovation of this thesis.

Second, this study has proven that compared with other abilities, executive's planning ability and problem-solving ability play a more critical role in improving organization performance. The role pressure of professional management of hospital executives in China has an impact on job satisfaction and organization performance, and that role pressure has a positive impact on organization performance, which was not mentioned in previous studies. It is suggested that relieving the role pressure can effectively improve the job satisfaction of the executives. In order to improve the professional management readiness of the executives, it is necessary to alleviate the role conflict and role ambiguity of the executives.

Third, this study has proved that training, policy uncertainty and leadership have varying degrees of influence on the professional management competence and role pressure of Chinese hospital executives. It is suggested that special attention should be paid to the impact and role of policies and leadership. To the best of our knowledge, this has not been mentioned in previous studies.

1.6.2 Practical contributions

First, this study defines the professional management of Chinese hospital executives from the perspective of professional management competence and role pressure, so that the government and the executives can have a more comprehensive understanding of professional management. This thesis proposes three dimensions of professional management competence, namely planning ability, control ability and problem-solving ability, and designs measurable dimensions and indicators, which can be used by the executives to understand their ability gap.

They can also be used as the criteria for the assessment of newly recruited executives. The thesis proposes that government and executives both have a part to play to relieve role pressure. It also describes the abilities that the executives are in urgent need in order to be competent.

Second, the research result shows that the improvement of competence, reduction of role pressures, and better professionalism can be achieved through improvement of training, policy, and leadership styles. Training should meet the demand. Management knowledge can be taught systematically through a combination of degree program and practice-oriented training so as to create a synergy between the theories and practice. Actual problems encountered by the executive in management can be analyzed through case study and solved with management tools. Action based teaching can be adopted to help the executives fully master these tools. Policy interpretation can be included in the training to help the executives better understand the policy requirements and implications. In this way, we can relieve their role pressure and minimize the impact of uncertainty from the environment, supporting executive's better planning and decision-making. The leadership style of hospital executives can be improved through using the transformational leadership scale or providing leadership courses in the training program.

Third, the research shows that professional management competence and role pressure can affect the executive's job satisfaction and organization performance. They can be used to evaluate the result of executive's professional management. Studies have shown that, in order to improve organization performance, both the government and the executives need to be equipped with strong abilities, especially planning ability and problem-solving ability. In order to improve job satisfaction and change the attitude of the executives towards professionalization, it is necessary to redefine their roles and job responsibilities.

1.7 Research roadmap

The research roadmap is as follows:

Research background and questions: Firstly, the research background is elaborated, and the challenges faced by the professional management of Chinese hospital executives are put forward, and related concepts and research objects are defined.

Literature review: Key variables including professional management competence, role pressure, job satisfaction, and organizational satisfaction are discussed based on literature, including their definitions and the ways of measurement.

Framework: Two frameworks including key variables are developed based on literature

review and interviews. The hypotheses in the framework are proposed and discussed.

Research methods: The dimensions and measurement indicators of the variables are preliminarily formulated after literature review and revised according to expert interviews. The finalized dimensions and indicators are included in the questionnaire. The pre-test and pilot-test is conducted to ensure the quality of the questionnaire and adjustment is made accordingly before the formal questionnaire distribution.

Data analysis and results: Questionnaires are distributed and collected for data analysis. Reliability and validity tests are performed followed by correlation analysis and regression analysis.

Discussions and conclusions: Results are discussed. Academic and practical contributions of the research are discussed followed by research limitations and future research directions.

The full text is divided into six chapters, the main content of each chapter is summarized as follows (Figure 1-1):

Chapter 1: Introduction. This chapter analyzes the pressure on hospital operation as a result of the changes in the external environment of Chinese hospitals. Then the researcher discusses the challenges of professional management of Chinese hospital executives from the perspective of professional management competence and role pressure. Three research questions are raised in response to the dilemma. The research object is defined. The research methods are explained, and academic and practical contributions of the research are put forward. Finally, the main content and structure of the dissertation are introduced.

Chapter 2: Literature Review. This chapter describes and analyzes the concept and content of key variables including professional management competence, role pressure, job satisfaction, organization performance, training, policy uncertainty and leadership based on literature. The chapter puts forward the working definition of these variables in this study, as well as their dimensions and measurement indicators.

Chapter 3: Research Hypotheses and Frameworks. Based on the literature review, this chapter establishes two research frameworks that include two key variables (professional management competence and role pressure), two variables of the outcomes (job satisfaction and organization performance), as well as three variables of influencing factors (training, policy uncertainty and leadership). Framework 1 identifies training, policy uncertainty and leadership as the influencing factors of hospital executive's professional management competence and role pressure. Framework 2 identifies job satisfaction and organization performance as the outcomes of hospital executive's professional management competence and role pressure. Ten hypotheses are raised based on the frameworks and variables.

Chapter 4: Research Methods. From qualitative and quantitative perspectives, this chapter first introduces the research methods, including interview method and questionnaire survey method; secondly, it introduces the structure of the questionnaire and the design of the question items; finally, it describes the process and requirements of sample selection, sample size, distribution, and collection of the questionnaires.

Chapter 5: Results. This chapter is divided into two parts. The first part describes the qualitative research results, and the second part carries out quantitative analysis based on the data collected, including descriptive statistical analysis, scale reliability and validity test, correlation analysis, regression analysis and hypotheses test.

Chapter 6: Discussion. This chapter first summarizes the main conclusions of the research results, including the key components of professional management competence and role pressure and the results of hypotheses testing, then discusses the academic and practical contributions of the research, and finally points out the limitations of the research, as well as the future research directions.

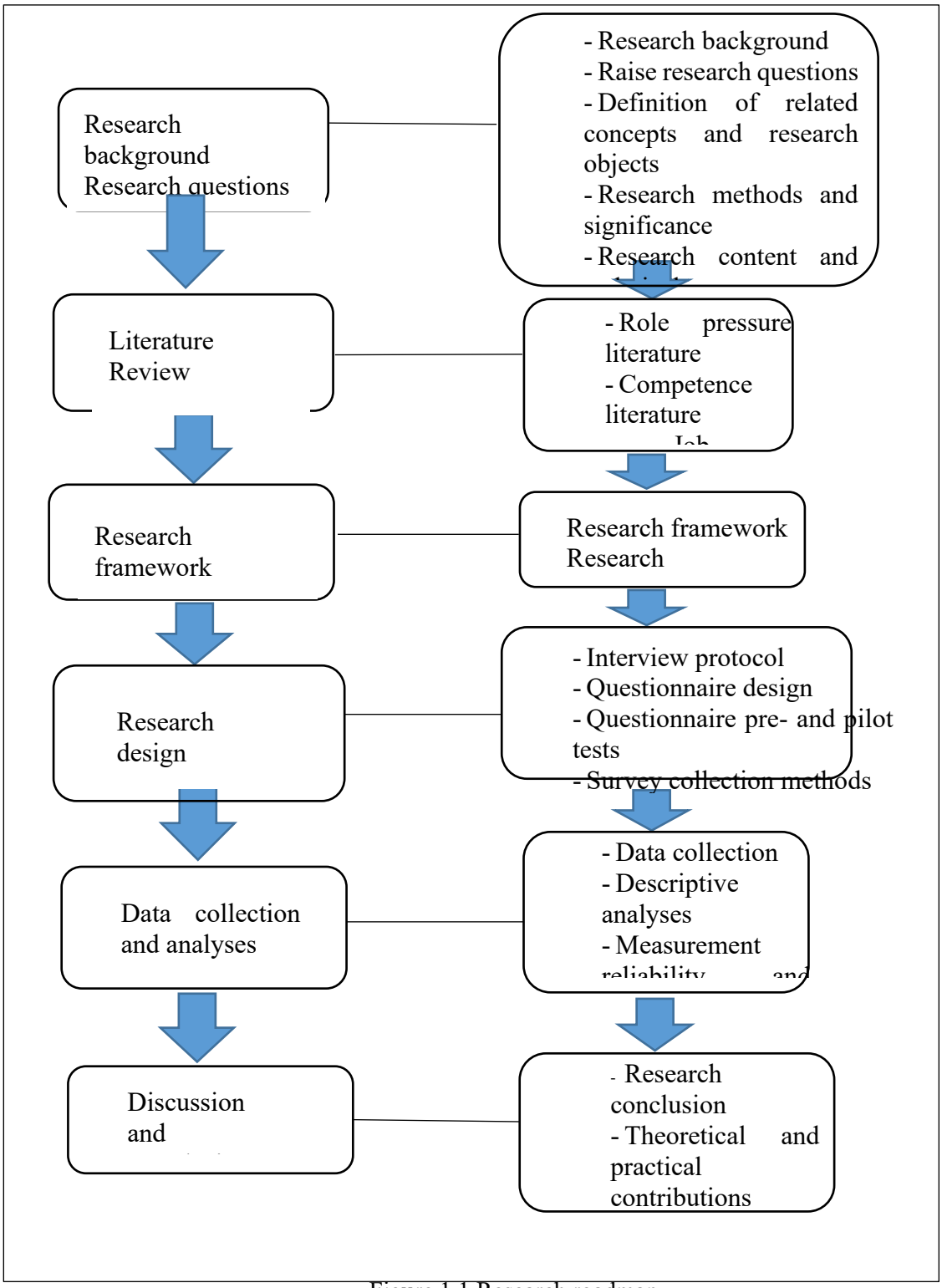

Figure 1.1 Research roadmap

Chapter 2: Literature Review

2.1 Professional management competence of Chinese hospital executives

A necessary condition of "professional management" of the executive is the appropriate competence. The connotation and extension of the concept of Chinese hospital executive's management competence are vague, combined with the concept of professionalization, this dissertation try to find out the core components of the Chinese hospital executive's management competence.

2.1.1 The basic concept of competence

The study of competence began in 1973 (McClelland, 1973). Unlike the shortcomings of the past, which could only evaluate people after the fact, competence can be evaluated in advance and can distinguish between individual characteristics of performance levels in a particular job and organizational environment (Spencer & Spencer, 1993). From different philosophical perspectives, scholars define competence differently (Spencer & Spencer, 1993; Mansfield, 1996; Siu, 1998; Shippmann et al, 2000; Wang & Chen, 2002; Miao & Wang, 2003). Some scholars believe that competence generally refers to the knowledge, skills, abilities and characteristics of the high-performing person (McClelland, 1973; Woodruffe, 1993), and some scholars use the dichotomous approach to define competence, first describing "hard" competence, meaning that the standard of completion of the work is predictable; Spencer and Spencer (1993) used the Iceberg model to provide a more graphic explanation, and the two scholars considered that competence had five characteristics: motivation, traits, self-concept, knowledge, and skills. The visible surface competence includes knowledge and skills, while the invisible potential competence includes self-concept, trait, and motivation.

During nearly 50 years of research, scholars have studied the content of competence characteristics in many ways and drawn different conclusions from different angles. However, the following consensus on the connotation of competence was reached (Xiang, 2003):

(1) Related to specific work

(2) Creates high performance

(3) Contains personality traits

According to the above discussion, competence refers to the mental model, values, personality, interest that can lead to high performance, and the knowledge, skills and ability that can meet the requirements of position based on a certain job or a certain work. In the selection and appointment system of Chinese public hospitals' executives, individual characteristics become an invisible factor, and the degree of control is weak. In order to ensure that the research can conform to the research scope of the subject, this dissertation expounds the competence mentioned most by the executives in the interview, and defines the competence of the professional management of Chinese hospital executives as meeting the job requirements, that is, knowledge, skills and ability which lead to high performance and efficiency.

2.1.2 Professional management competence of Chinese hospital executives

Some scholars believe that the executive is first and foremost a top medical expert or researcher because they can attract many good people to work in their hospitals; and secondly, their leadership and management skills can provide a vision for employees, and a well-known and sustainable foundation for hospital achievements in medical service, teaching and scientific research (Weil, 2014). Medical care is an industry related to the national economy and people's livelihood, which requires that hospital executives have a higher sense of responsibility than their financial ability (Raeissi & Nasiripour, 2011). The complexity of the industry requires that the executive must have medical background or be familiar with hospital management process, that is to say, hospital work or management experience is very important, because the medical specialty determines the uniqueness of the hospital's operation, which becomes one of the ability elements of hospital managers (McConnell, 2008). At the same time, the executive must be a person with emotional intelligence (Lobas, 2006; Naylor, 2006). Obviously, the competent executive is an "all-round practitioner", who needs to understand the hospital, understand management, be a medical expert, and have complete personality traits.

In the special context of China's medical reform, the competence model of Chinese hospital executives is also a research hotspot. Some scholars have proposed that the professional hospital executive's competence system must include technical capabilities, management capabilities, and leadership capabilities (Sun, 2012; Yao, 2014). Judging from the index weights, professional knowledge and skills are the most important competence of professional executives in public hospitals. Hospital management practices take second place. Among professional knowledge and skills, hospital management skill has the highest weight, and hospital management experience has the highest weight in hospital management practice. It can

be seen that ability and experience are the main factors for the professional executive's evaluation (Aluise, Vaughan, & Vaughan, 1994; Yao, 2014). According to Cui (2012), the competence of Chinese hospitals' executives is divided into two parts: benchmark competence and identification competence. The benchmark competence mainly includes the basic knowledge and ability of management, and the identification competence clearly puts forward the three major abilities of the outstanding manager's personal characteristics, organizational goal achievement ability and social and group maintenance ability.

There are many researches on the competence of executives, and the dimensions are different. This study excludes the factors of personality traits in the competence of executives. Based on the results of literature collection and interviews, this study proposes that the job requirements of the executive are to set the direction and handle contradictions, that is, the competence of professional management includes two dimensions: strategic management capabilities and problem-solving capabilities.

2.1.2.1 Strategic management capabilities

"Strategy" is a military term that means "the art of commanding the army". In the 1960s, strategic thinking began to be applied to the commercial field, and together with Darwin's "natural selection" biological evolutionary ideas, they became the two major sources of strategic management disciplines. Strategic management refers to the overall and long-term development direction, goals, tasks, and policies of an enterprise or organization, as well as the art of decision-making and management of resource allocation (Xu & Wang, 1999).

Modern strategic management generally includes four elements: strategic analysis, strategic selection, strategic implementation, and strategic evaluation. The integration of the four steps is the complete connotation of strategic management. The strategic capabilities of enterprise managers are mainly reflected in the connotation of planning ability and control ability. Planning ability includes setting future strategic goals and positioning of strategic business. Control ability includes quickly detecting changes and taking timely measures to reduce risks. It is a must for all entrepreneurs and senior managers, and it should be the number one ability (Man, Lau, & Chan, 2002; Fernando, 2012; Strand, 2014).

Although many excellent doctors have personal characteristics as leaders, including honesty, passion and enthusiasm, few doctors systematically master the following skills, including how to make strategic plans, how to make financial decisions, and how to design organizational structure according to objectives, which are the key elements to play a leading role (Schwartz & Pogge, 2000). The research on the competence of Chinese hospitals'

executives also shows that the executives must have the capabilities of strategic management, and in the construction of their ability system, strategic management is the first ability in professional skills (Cui, 2012; Yao, 2014).

Planning ability is reflected in the ability of managers to formulate long-term development strategies and plans of enterprises (Kuratko, Hornsby, & Naffziger, 1997; Man et al., 2002; Strand, 2014); the ability to analyze and make decisions on advantages and disadvantages in combination with external environment and internal resources, and the ability to integrate resources according to strategic objectives to implement strategic intentions (Man et al., 2002; He & Li, 2005). Some scholars think that the strategic ability should also include the ability to constantly adjust the strategy in the process of implementation, such as accurately repositioning the position of the enterprise in the market, timely adjusting the strategic objectives and business ideas, rapidly recombining resources to adapt to the changes in the environment, formulating strategic objectives and plans, rapidly increasing and decreasing business activities to match the realization of the strategic objectives (Man et al., 2002; He & Li, 2005; He, Lian, & Shen, 2007; Xu et al., 2008).

Strategic planning is the first step in strategic management. Strategic success also requires a high degree of attention to the strategy implementation process. The control ability in the strategy implementation process is mainly the ability to monitor, feedback and adjust the strategic plan implementation process. After the goal is determined, there will be various changes in the implementation process. Changes in external policies and adjustment of internal resources will affect the realization of the stated goals. Therefore, in the process of strategy implementation, it is generally necessary to observe the progress of implementation according to the goals decomposed by the plan (Man et al., 2002; He & Li, 2005). If there are changes in the initial conditions, it is necessary to be able to adjust the strategic goals according to the new situation and make corrections in a timely manner, and sometimes even to overturn the established plan (Kearns & Sabherwal, 2007), adjust the organizational structure (Man et al., 2002) and implement new strategic plans (Man et al., 2002; He & Li, 2005).

The strength of strategic control ability directly affects organization performance (Widener, 2007). Control ability is generally more important to implement the strategy in a high-risk environment. The magnitude and frequency of changes in internal and external factors will affect the achievement of strategic goals. In the context of uncertainty associated with China's current medical reform policy, control ability is particularly important. Process control through tools can better reflect the scientific nature of the strategy implementation process. The most commonly used is the Balanced Scorecard (Kaplan, 1992). The advantage of balanced

scorecard is to avoid the limitation that traditional financial performance evaluation system only provides information about the result. It can design and reflect the driving factors of results from multiple dimensions, including financial status, customer information, internal business process, enterprise learning and growth to measure the overall performance of the organization.

As for the measurement of control ability, from the management level, based on the relevant theories of strategic management and operation management, Wu, Melnyk, and Flynn (2010) distinguished the operation resources and operation ability, defined the operation ability as the specific technology, process and practice developed by the enterprise in the operation management system, and solved the problem by allocating the operation resources. Thus, it creates barriers making it difficult for competitors to imitate and preserves competitive advantages. The control of the strategic plan includes adjusting to the external environment, feedback of using tool, and restructuring resources to respond to the market (Eisenhardt & Martin, 2000; Wu, Melnyk, & Flynn, 2010).

2.1.2.2 Problem-solving capabilities

There is no doubt that management is a process of constantly facing and solving problems. The so-called problem (DZurilla & Goldfried, 1971) is a response that wants to play a certain function or role when facing a specific situation but cannot be implemented immediately. Therefore, problem-solving ability is a series of cognitive processing and emotional and behavioral responses of individuals to solve problems in real work or life environment (Jonassen, 2000; Yang, 2007). Some scholars have classified the entrepreneurial ability and proposed that the core of entrepreneurial ability is the ability to deal with imbalances (Li, Lang, & Zhang, 2003). According to the complexity of the problem, it can be divided into simple problems and complex problems. The simple problems are those that there is no interdependence between the relevant aspects of the things handled, and they can be completed independently without cooperation. On the contrary, complex problems are a combination of knowledge and information, which requires the ability to analyze, so that they can use knowledge and methods to distinguish the main contradictions and main aspects of contradictions from information (Yuan, Pan, & Wang, 2001). At the same time, complex problems involve the relationship between all parties. To solve problems, multiple departments need to cooperate with each other and have the ability of decision-making, communication, and coordination. A particular example of a complex problem is the new problem (Swinth, 1971). In the current situation of China's medical reform, hospital executives are facing unprecedented policy risks and operational pressures. Executives need to be able to solve problems, especially

complex and new problems. At the same time, managers also firmly believe that the process of dealing with problems is the most meaningful learning (Reuber & Fischer, 1999; Yuan, Pan, & Wang, 2001), which is highly positively related to managers' personal success (Yuan, Pan, & Wang, 2001), and can effectively improve managers' job satisfaction and life satisfaction (Ayres & Malouff, 2007).

Problem-solving is a process, including problem analysis and problem solving. A senior manager such as the executive should be good at detecting and solving problems at all stages of the occurrence of problems (Yang, 2007), which involves different abilities (Jonassen, 2000).

In the problem analysis stage, they should have the ability to analyze, so that they can divide the problem into several parts and explore the relationship between them. In the process of analyzing problems, excellent managers will show their keen, innovative, and judgmental abilities. They are good at grasping major events and essence and show certain innovative abilities (Wang & Chen, 2002; Miao & Wang, 2003). This requires considerable work experience and knowledge. From the perspective of philosophy, on the basis of timely finding out problems, they can find out the main contradictions and main aspects of contradictions, laying the foundation for further solving problems (Yin, 1997).

In the problem-solving stage, decision-making ability is needed. Decision-making ability is the link between problem analysis and problem-solving, and it is the process of selecting a scheme among several schemes. Mullen and Roth (1991) refined the decision-making process into the stage of confirming the essence of the problem and analyzing the value, and the stage of making alternatives, so as to evaluate the advantages and disadvantages of each scheme. The final step is to ignore sunk costs and make a choice. However, the actual situation will be very complex. In the case of incomplete information, decision makers are required to bear the risks associated with uncertainty (Kerstholt, 1994), especially in the face of dilemma (MacKay & O'Neill, 1992; Van Vugt & De Cremer, 2003).

In addition, the ability to communicate and coordinate is also needed by the executive when solving the problem (Schwartz & Pogge, 2000; Li, 2006; Cui, 2012; Sun, 2012; Yao, 2014), and judgment and resilience are also important components of entrepreneurial competence (Li et al, 2003).

On the measurement of problem-solving ability, Mainemelis, Kark, and Epitropaki (2015) believed that a good leader should be a "creative" leader, that is, having creative ability, reflected in the problem-solving ability, such as having unique views on problems, fresh and creative solutions (Wen, Zhou, & Lu, 2017). They should also have an active personality, be able to identify favorable opportunities, and always look for better ways to solve problems

(Bateman & Crant, 1993; Seibert, Crant, & Krainer, 1999; Li et al., 2014; Mainemelis, Kark, & Epitropaki, 2015).

Based on the literature of strategic management and problem solving and combined with interviews, this study forms the Competence Scale for the professional management of hospital executives in China (Shown in Annex C*, Table C.2)*.

2.2 Role pressure of the professional management of Chinese hospital executives

The concept of role originated from drama refers to the role of each actor to a special character when performing on the stage. American sociologist Mead borrowed this concept into sociology to describe some kind of task in life (Rizzo & Lirtzman, 1970). In this dissertation, the concept of role is introduced into the study of factors influencing the professionalization of hospital executives in China, and the impact of role pressure on individual performance and organization performance is explored.

2.2.1 Basic concept of role pressure

2.2.1.1 Role pressure

Role is the basic concept of role theory. Based on different values, concepts, starting points and research paradigms, different research schools have different purposes, contents, and definitions. However, the core of the definition is based on the description of the dynamic operation process of status, relationship, expectation, and behavior (Faia, 1980; Solomon et al., 1985; Boella & Torre, 2007; Xi, 2010). In this dissertation, role generally refers to a set of norms and behavior patterns of rights and obligations consistent with a certain social status and identity of people (Schuler, Aldag, & Brief, 1977; Ren, 2009; Shahbaz & Shakeel, 2013).

After connecting role theory with career theory, it is not difficult to find that roles are inherently professional, and each profession plays a certain role in society (Xie, 2014). When an individual obtains a certain social identity, they occupy a certain position in the society. After being influenced by the expectations and norms of the relationship with other relevant individuals, the final manifestation is the behavior pattern that each role will expect. When the role information sender and receiver cannot show the expected behavior for various reasons, the role pressure is generated. Due to the change of system, environment, individual and other factors, people will make more than normal adaptive response to work (Lazarus & Launier, 1978; Shi, 2003), or feel uncomfortable (Edwards & Van Harrison, 1993).

There are three categories for the composition or dimensions of role pressure:

The first one is the two-dimensional theory, which holds that role pressure includes role conflict and role ambiguity (Rizzo & Lirtzman, 1970; Chonko, 1982; Baroudi, 1985; Wang, 2007).

The second, three-dimensional theory, includes role conflict, role ambiguity and role overload (Jackson & Schuler, 1985; Boyar et al., 2003; Ngo, Foley, & Loi, 2005; Piko, 2006).

The third, six-dimension theory, including role conflict, role ambiguity, role overload, role inconsistency, role competence insufficiency and role competence excess. (Wang, 2007; Ambrose et al., 2014; Wang, 2017).

2.2.1.2 Role conflict

Role conflict refers to the conflict between role requirements as well as policies and standards to evaluate role performance, which may be inconsistent with requirements, or it may be required to complete impossible tasks (Celik, 2013), or conflicts between expectations of multiple roles (Yao & Sun, 2010; Celik, 2013; Liu et al., 2014).

From the different definitions of different scholars, it is not difficult to find that scholars define role conflict as a kind of contradiction. There are two or more requirements that cannot be met at the same time. The difference is that the reasons for not meeting the requirements at the same time are different. Generally, there are four situations as follows. First, the role sender himself conflicts, that is, the same role sender gives conflicting expectations to a role receiver; second, when there is more than one role sender, the expectations of the senders to the receiver conflicts with each other, and the receiver is in a dilemma; third, there are conflicts between individuals and roles. The internal motivation, values and abilities of the role receiver are not consistent with the expectations or social values of the role sender; fourth, there are conflicts among roles. The same role receiver plays multiple roles at the same time. These roles have different expectations and norms, and there are contradictions within himself (Wu, 2011; Celik, 2013).

2.2.1.3 Role ambiguity

Regarding role ambiguity, the first thing found in practice is that the definition of role responsibilities is not clear. New situations such as the complexity of the organizational structure and the diversification of the business environment have resulted in detailed regulations and complete job descriptions that cannot solve the problem of role ambiguity. Immediately, the individual's role is blurred due to the obvious lack of relevant information

received (Muse, Harris, & Field, 2003), and the individual cannot predict the consequences of their actions or does not know the expectations of others (House & Rizzo, 1972). These situations will all lead to role ambiguity.

2.2.1.4 Role overload

Role overload refers to that the role receiver is unable to play the role effectively due to time or ability, so that he or she cannot complete the task according to the role requirements (Ngo, Foley, & Loi, 2005).

From the perspective of the causes of role overload, it can be divided into two situations:

First, role overload because the role receiver feels too much workload for the work received, or external factors have constraints such as time constraints, causing it to exceed the range that the individual can bear, resulting in pressure.

Second, role overload because the role receiver for the work received, the individual's internal factors such as knowledge, skills and abilities exceed the range that the individual can bear, resulting in pressure.

Role pressure is considered an important cause of personal work pressure and a catastrophic factor for organization performance (Ngo, Foley, & Loi, 2005). Earlier research generally believed that role pressure is a negative factor for individuals or organizations. The higher the role conflict and role ambiguity, the lower the job satisfaction, the more work-related tensions, and the lower the work participation and engagement (Fisher & Gitelson, 1983; Tubre & Collins, 2000; Ngo, Foley, & Loi, 2005). Role overload can lead to high levels of tension, anxiety, and even depression, leading to poor job performance (Jackson & Schuler, 1985; Tubre & Collins, 2000; Gilboa et al., 2013). Role conflicts can lead to strained relationships, poor team performance, and low organizational commitment (Liddell & Slocum, 1976; Burke & Scalzi, 1988).

Some scholars believe that when role conflicts exist, work performance will be relatively poor. Some studies have found a positive relationship between the two (Karatepe & Uludag, 2008), and some scholars have found that there is no clear causal relationship between role conflicts and job performance (Brown & Peterson, 1993).

The relationship between role conflict and role ambiguity and job performance is uncertain. Studies have confirmed a U-shaped relationship between pressure and job performance (Wu, 2011; Celik, 2013), that is, in the initial stage, pressure can become motivation, urging the executives to exert their imagination and subjective initiative to solve the problems, but at a certain stage, stress may bring about burnout, affect job enthusiasm, and then affect job

satisfaction (Zeira, 1992).

Similarly, role ambiguity also leads to lower productivity and lower group honor, because the main reason for role ambiguity is that the information transmitted by the information sender is not clear, role-playing will show dissatisfaction with the message sender and show tension, while the role itself will be more anxious, frustrated, and disgusted with work. In addition, role pressures can lead to employee turnover and reduced work commitment. In the presence of pressure, it will also affect the physical and mental health of employees, reduce their enthusiasm for work, and generate intentions to quit (Yürür & Sarikaya, 2012; Curran & Prottas, 2017; Nordhall & Knez, 2018). Of course, dissatisfaction with work status may cause some employees to think of changing jobs (Claiborne et al., 2015).

There are many factors that cause or lead to role pressure, ranging from the organizational level, organization type, structure, policy, and organizational culture, and they may all lead to role pressure (Madera, Dawson, & Neal, 2013; He, 2014). From the perspective of job content, unclear job description, job stress, background information and insufficient training of special skills will lead to role stress (Ngo, Foley, & Loi, 2005).

Literature search found that most studies used 3-dimensional theory (Jackson & Schuler, 1985; Ambrose et al., 2014). The scale developed based on Rizzo & Lirtzman (1970) and modified by Schuler, Aldag, and Brief (1977) is relatively mature and therefore widely used (Siegall, 2000). Based on the literature, this study forms a Role Pressure Scale for professional management of hospital executives in China.

2.2.2 Role pressure of professional management of Chinese hospital executives

In daily work, the executive will receive requirements from many aspects. Conflicts and ambiguities are long-standing and common (Barber et al., 2014; Shi et al., 2018), and the executives always face pressure (Burke & Scalzi, 1988; Anderson, 2011; Hutchinson, 2018). The main sources of stress are the following four aspects: first, it is determined by the complexity of hospital operations (Burke & Scalzi, 1988; Drucker, 2008); second, it is determined by the continuous updating of technology, changes in interpersonal relationships, and the important role of medical services in the national economy and people's livelihood (Radoszewski, 1985; White & Wisdom, 1985); third, drastic changes from the external environment (Burke & Scalzi, 1988; Landry et al., 2010); fourth, conflicts between policymakers and hospital managers (Barber et al., 2014). In China, hospital executives play multiple roles, and the four pressures mentioned above will bring role pressure to the executives. The direct consequence is to affect the work enthusiasm of the executives, which is also an

important reason why the executives find it difficult to effectively perform the responsibilities (Kadir et al., 2017), and thus naturally brings problems to the organization performance (Burke & Scalzi, 1988).

According to the definition of roles, pressure is generated in the interaction of roles (Katz & Kahn, 1978). Chinese hospital executives play many roles as hospital managers, doctors, government officials and other roles.

2.2.2.1 Role as hospital manager and doctor

"Holding two positions at the same time" is one of the most discussed role conflicts at present, that is, the phenomenon that doctors, as managers, continue to engage in clinical practice, which is also very common in hospitals in other countries. In the United States, these characters are also given the same image, the metaphor as China's "holding two positions at the same time" is wearing two hats (Blair & Payne, 2000; McConnell, 2008).

There are three reasons why doctors are managers. First, the traditional idea is that the public's understanding of the hospital is the place to cure the disease and save people. The executive must be a doctor and a clinical expert, otherwise people's trust to the hospital will be very poor; second, the hospital business is professional, and the operation is complex. Managers must understand the characteristics of hospital operation and the professional ability to communicate with medical experts. They need experts of medical background to be part-time or full-time managers; third, there are also views that in teaching hospitals or hospitals as medical centers, it is more appropriate for medical experts to be executives, but they need to be given corresponding management training and have management ability (Stoller, 2009).

The emergence and existence of "holding two positions at the same time" is determined by the selection of executives and the tenure system (Shi, Zhou, & Xu, 2018).

One reason is the selection mechanism of executive. In China, the career development path of the executive is generally from doctor to expert, and then to hospital level leader, which is so-called "people who perform better get promoted to upper management level". The executive is generally the chief physician, which is the senior title in medical field and the leader of a certain medical discipline in a hospital. Some executives are also the chairpersons of the National Academic Committee, and some even have the title of academician. It is an irrational choice for an individual to give up medical specialty and engage in management (Shi, Zhou, & Xu, 2018).

Another reason is the executive's confusion about his career. In China, the executive is selected and appointed by the authorities, and the executive is subject to the tenure system. The

tenure is five years and can be reappointed for two consecutive terms. If the executive works in management and abandons clinical skills, the risk is that before they reach retirement age the tenure may expire, and then the former executive will face the situation of hitting a career ceiling, having unattractive job positions at the current level, and incompetent to return to clinical work.

"Holding two positions at the same time" is regarded as an obstacle to realize the professional management. The first is the conflict of the executive's energy. Hospital operation needs a lot of energy, but executives "holding two positions at the same time" usually have high achievements in their medical specialty. They will not give up, but will continue or invest more energy, which will form role conflict. Secondly, it is reflected in the conflict of the executive's ability. "Holding two positions at the same time" means having dual tasks in a dual context. It also means that when the executive regards himself as a doctor, he will face problems that the doctor will not encounter. When he regards himself as a manager, he will also face difficulties that the manager will not encounter. The executives “holding two positions at the same time” generally have not received management training and lack management knowledge. When the scale of development is limited and more market-oriented, there are requirements for operation and management, the medical knowledge and the original management experience and skills are no longer effective. The deficiencies in the ability overwhelm the executive in management, causing a certain role ambiguity and role overload.

2.2.2.2 Role of hospital manager and administrative officer

In China, the assets of public hospitals belong to the state, although they are not government institutions, the government has jurisdiction over the resources and operation of hospitals, such as personnel, assets, and performance. The executives also have the corresponding administrative status and can serve in hospitals and government institutions. To a certain extent, they can be regarded as government officials. Their management behavior and official identity is an obstacle to the professional management.

The property right and complexity of the hospital are determined by many of its superior authorities. Table C.1 in the Annex illustrates the business scope of the government departments in charge of Chinese hospitals. In the actual operation, hospitals with different natures, scales and affiliations all receive orders from different departments. There are conflicts between the orders, and the vague requirements of the orders themselves are common.

The dual identity of the executive determines the existence of role conflict. Public hospitals account for the vast majority of the service volume in China's medical service system. Their

biggest characteristic is to adhere to the public welfare, that is to say, they must abide by the government's instructions. Sometimes there is a conflict between the government's instructions and the development of hospitals, especially for the executives of public hospitals, they all have administrative status and are government officials. At present, China's hospital management has gradually entered a substantial stage. Under the premise of pursuing equity of medical service, cost control is the biggest challenge of hospital reform. Since 2017, the growth rate of hospital income has been limited, and policies such as zero markup of drugs, zero markup of consumables, purchase of drugs with volume, and reduction of diagnosis and diagnostic costs have been introduced frequently (Barber et al., 2014). Many hospitals have suffered losses and showed no signs of improvement, which has never been seen in Chinese history. When the drug markup is cancelled and the financial compensation is not in place, it is required that the executive of a public hospital not only implement government policies, but also rely on hospital operation to achieve the hospital's survival and development, which naturally leads to conflict and ambiguity between roles (Souba, 2002; Griffith, 2017).

Therefore, different from the role of hospital executives in other countries, the role pressure of hospital executives in China comes from the following two aspects: first, hospital managers and doctors; second, hospital managers and government officials.

2.3 Outcome variables of professional management of Chinese hospital executives

This section will explain the influence of professional management competence and role pressure on job satisfaction and hospital performance from two dimensions of the individual and the organization.

2.3.1 Job satisfaction

Job satisfaction refers to the degree to which employees feel pleasure from work (Liu, Spector, & Shi, 2007), or it can be said to be satisfaction from work to some extent. It is a subjective feeling, perception, or attitude (Davis, 2007). Employees' satisfaction with work directly affects their enthusiasm, performance, and work quality, and then directly affects organization performance. Through satisfaction index, we can trace back to the problems of organizational operation and provide information for management. Therefore, job satisfaction has always been one of the most popular concepts in the field of organizational behavior (Penney & Spector,

2005).

The measurement of job satisfaction is directly related to the paradigm of concept. One is based on the concept of emotion, and the measurement is single dimensional, which regards job satisfaction as a whole level and content (Penney & Spector, 2005; Liu et al., 2007; Bowling & Hammond, 2008). The defect is that we only know the result, not the reason. Another concept is based on cognition, which regards satisfaction as the evaluation of different working conditions and contents. This paradigm has greater significance for organization management and multi-dimensional measurement (Davis, 2007).

In the framework of multidimensional analysis, the content of satisfaction can be further divided into endogenous and exogenous job satisfaction (Spector, 1997). This classification standard is whether the feeling towards the task itself is internal or external. For example, the sense of achievement, responsibility, personal growth, or development of work are endogenous dimensions. However, the more visible or comparable factors of working conditions, salary, status, and interpersonal relationship are exogenous dimensions (Spector, 1997). The two reflect different priorities. Endogenous job satisfaction can better reflect the degree of investment in work, which requires more space for career development, while exogenous job satisfaction more reflects the requirements for work environment, but both need to be worked on by managers (Herzberg, 2011; Campbell, Mcallister, & Eley, 2012; Warburton et al., 2014).

This thesis uses a multi-dimensional evaluation system. The most representative in the multi-dimensional evaluation system is the Minnesota Satisfaction Questionnaire (MSQ) (Weiss, Dawis, & England, 1967). There are short and long MSQ questionnaires. The long questionnaire has 120 questions, which can measure satisfaction in 20 dimensions and is relatively complete. Spector (1997) introduced endogenous and exogenous job satisfaction into MSQ, forming a short-form MSQ that is widely cited today (Moorman, 1993; Intaraprasong et al., 2012). This study was based on a short-form MSQ questionnaire and interviews to form a professional job satisfaction scale for Chinese hospital executives.

2.3.2 Organization performance

Organizations are the social systems that provide individuals and society with what they need. Efficiency and effectiveness are the foundation of an organization's existence, so the meaning and conditions of an organization's existence are based on its performance (Suliman, 2001; Celik, 2013).

In the theory of business growth, efficient and effective organizations are defined as business growth. Organization performance is an absolute dependent variable. If a study does

not clearly indicate the relationship between independent variables such as resources, dynamic capabilities, and competition conditions, and organization performance, then this study has no research significance or is not important at all (Gray et al., 1998; Jia et al., 2013).

The content of organization performance is related to its stage. Prior to the 1980s, performance evaluation focused on financial evaluation, and indicators were generally limited to income, profit, and return on investment. The methods used for corporate performance evaluation in the 1980s mainly include the DuPont financial analysis method founded by Brown and the Analytic Hierarchy Process (AHP) proposed by Professor Saaty (2010). But as the market shifts from supplier-led to demand-side, companies need to know more about how their financial goals are achieved and why gaps arise. The biggest flaw of financial indicators is that they only represent the past of the enterprise, and it is impossible to analyze the future performance of the enterprise from the indicators. Therefore, non-financial goals such as customer satisfaction, corporate strategic goals, and corporate self-innovation and sustainable development capabilities are also added to the company's performance evaluation system. The classic tool is the balanced scorecard. The use of performance tools such as balanced scorecards can provide companies with the information they need for operation management and process reengineering to further improve business performance.

With regard to the researches on the influencing factors of organization performance, from a strategic perspective, environmental factors such as technology, environment, and industry life cycle, as well as strategic variables such as strategic goals, missions, and strategies, can affect corporate performance (Covin & Slevin, 1991; Jia et al., 2013). From the perspective of internal organization, leadership, organizational culture, and learning ability are significantly related to performance (Bird & Beechler, 1995; Martell & Carroll, 1995; Jia et al., 2013). High-performance organizations are generally associated with leadership commitment, customer orientation, supplier management, product design, culture, process control, informatization, employee empowerment and training, and quality (Goonan & Stoltz, 2004; Ahire, Golhar, & Waller, 2010). Studies have also shown that customer management, supplier partnerships, communication, customer orientation, external relationship management, strategic quality management, teamwork, quality culture and quality control are also typical characteristics of high-performance organizations (Black & Porter, 1996).

The Baldrige National Quality Program is a commonly used tool for measuring corporate performance in the United States. In a study using it to measure hospital performance, it was confirmed that factors such as leadership, patient-centeredness, employee value, strategic planning and implementation are effective measurement dimensions to distinguish high and

low performance. Its performance indicators include health outcome, patient orientation, financial and market performance, employee satisfaction, organizational efficiency, government, and social responsibility fulfillment (Goonan & Stoltz, 2004).

The classic enterprise performance scale mainly refers to the perspective of Covin and Slevin (1991) and puts forward that research that can only use data collected in a questionnaire form for quantitative analysis will generally pay attention to the following three principles in the design of indicators. First, indicators should reflect as many aspects of corporate performance as possible. The second is to evaluate corporate performance through the subjective feelings of managers or owners. For example, the subjective evaluation of corporate performance by general managers or business personnel is not convincing. Third, subjective feelings need to be based on the comparison with peers or competitors.

The specific measurement is Chandler and Hanks (1993) research scale, including two dimensions of growth and profitability, in a total of six items. Based on the literature, this study formed the organization performance scale of professional management of hospital executives in China.

2.4 Influencing variables of professional management of Chinese hospital executives

2.4.1 Training

Training refers to systematic learning and knowledge acquisition methods that can improve individual or organization performance (Aguinis & Kraiger, 2009; Turner, Stawicki, & Guo, 2017). Training is an important means to improve skills of the human resource. The United States invests US $126 billion annually in the training industry (Taylor, Taylor, & Stoller, 2008).

The effect of training is diverse and positive. The most direct effect of training is to acquire knowledge. Whether acquiring declarative knowledge, procedural knowledge, or strategic knowledge, the effect of training is obvious, which can effectively improve work performance (Kraiger, Ford, & Salas, 1993; Aguinis & Kraiger, 2009), and can achieve many positive changes, such as acquiring new skills (Hill & Lent, 2006; Satterfield & Hughes, 2007).

In the context of more complex healthcare environment and accelerated changes, the original management personnel cannot adapt, and the number of new forces is obviously insufficient. This is an important reason for the lack of personnel, or even more worrying, is the absence of a training system or regime (Ackerly et al., 2011). Systematic management training

for medical students can enable managers to adapt to the complex hospital operating environment (Gunderman & Kanter, 2009). In the face of this problem, some countries have implemented more systematic academic training programs. For example, the United States has set up a series of hospital management training programs, including three stages: premedical, University and postgraduate, and post job continuing education. They set up the MD-MBA joint education program (Doctor of medicine; Master of business administrator), which started in the 1980s. Listed (1987) believed that if medicine becomes an independent profession, then it needs managers trained by the MD-MBA system to lead the profession. Subsequently, the United States began to try to add management training courses during the residency training period. Hence, hospitals have begun to recruit a large number of MD-MBA graduates with no practical experience (Ackerly et al., 2011). A similar degree education is generally implemented in Europe, and systematic management training is provided for students who are interested in hospital management (Kirkpatrick et al., 2016; Parviainen et al., 2018). Of course, learning by doing is the best way to impart tacit knowledge or skills (Aguinis & Kraiger, 2009; Ackerly et al., 2011). It is also the main way to improve the management ability of hospital executives in China.

The purpose of training is to improve personal ability and personal or organization performance. Its effect is closely related to the training content and form, and the core is the training content. The correct evaluation of training needs can effectively formulate training objectives and contents. Training needs are influenced by personal factors and organizational factors. Personal age, personality characteristics, self-control ability, cognitive ability, work participation, all affect the degree of training needs. Organizational atmosphere is also an important factor affecting training needs (Colquitt, Lepine, & Noe, 2000). To design an effective training plan, it is necessary to combine the education background, work experience, career planning and objectives of the trainees. For medical professionals, it is also a big challenge to receive management training in order to enter management positions. In order to adapt the training content to their learning habits and become the content they are interested in, more flexible content must be paid attention to when designing courses (Weil, 2014).

China's hospital management training programs almost started at the same time as professionalization, with various forms. The organizers include institutions of higher education, government departments and industry associations, as well as many unofficial training institutions. There are various forms of training, including academic education, lectures, discussions, learning in doing and other forms of knowledge learning and skills acquisition. Although there are many hospital management training programs and various forms, the

trainees are not very satisfied with the training effect. It is generally believed that the training content is not systematic and practical (China Hospital Association, 2014), and the same situation exists in other countries (Raeissi & Nasiripour, 2011).

The effectiveness of training depends on the correct implementation of each step, including training research, curriculum development and training evaluation. Training measurement has multiple dimensions and single dimension. The most widely used evaluation model is ‘Model of Four Levels’ or ‘Kirkpatrick’s Model. The four-tier model of 'Kirkpatrick's model is evaluated according to the training process, and the improved model is based on four dimensions, namely, the absolute amount of personal training input, such as training duration and attendance; the content of the training, such as the matching degree of courses and needs and the teaching form; the proportion, such as the coverage of trainees, and the growth rate of investment; the emphasis on measures, such as whether the organization explained the significance of the training to employees, or stressed the importance of the training (Aragón-Sánchez, Barba-Aragón, & Sanz-Valle, 2003; Tharenou, Saks, & Moore, 2007).

This dissertation takes the training effect as an independent variable and studies the relationship with other variables. From the two dimensions of systematization and practicability of training content, combined with the executive’s opinions on the current training content in the interviews, the measurement indicators of training variables are formulated.

2.4.2 Policy uncertainty

Policy is traditionally defined as a set of static rules or regulations reflecting the will of the government (Walker, Rahman, & Cave, 2001). Policies as interference factors affect the decision-making of healthcare organizations (Bossert & Beauvais, 2002; Seshadri et al., 2016). One of the major characteristics of the policy is future-oriented. If the future can be accurately predicted, then effective policies can be deduced based on the results. But in reality, this prediction is unrealistic (Bankes, 1993). Because the scenarios that the policy is based on or speculated on will change, such as unexpected opportunities, or ignored key factors, or even failure to achieve the expected results, uncertainty becomes the most typical feature of the policy (Walker, Rahman, & Cave, 2001). Another reason for policy uncertainty is that the stakeholders will play games around the policy, and the policy must be adjusted repeatedly in the implementation process. Especially in a complex system or multi-objective task, policy uncertainty is more prominent (Haasnoot et al., 2013).

From the definition of role pressure, uncertainty can lead to role ambiguity, affect organizational decision-making (Dill, 1958), and then become the cause of role pressure

(Schmidt et al., 2014).

China's new medical reform is a multi-objective task. In the pursuit of equity and accessibility of medical services, it also pursues service convenience and affordability. In the environment of frequently changing policy and unclear direction of medical reform, Chinese hospitals' executives pay special attention to the policy. Part of the reason is that the executives of public hospitals play the role of "government officials", and the responsibility lies in the implementation of public welfare policy. Some policies will cause policy burden, which is a unique phenomenon of Chinese state-owned enterprises. They must act as the government and bear some social responsibilities (Lin & Li, 2004). For example, send clinical experts to remote areas to practice medicine for a period of time. The more important reason is that the current medical reform policy is directly related to the sustainable operation of the hospital, such as the change of the payment method of medical insurance, from payment by project to payment by diagnosis related groups. Hospital cost control and business structure must be adjusted accordingly, but the government has no standard answer. The incentive policies for social capital to run hospitals are also frequently issued, but they are always difficult to implement. When the executives make decisions, they are also in a dilemma.

2.4.3 Leadership

The study of leadership began in the early 19th century, but it was not until the 1970s that a leadership theory different from management came into being. Zaleznik (1981) believes that managers and leaders are different roles, therefore they have different understandings of their attitudes towards goals, their understanding of work, their relationship with others, and their self-perception.

Among many leadership theories, the "new leadership theory" dominates at present. The new leadership theory was created in the business environment with multiple values, increasingly fierce competition, and uncertain organizational environment. The representative is "transformational leadership". In terms of ideological sources, Burns (1978) first proposed the concept of transformational leadership, but Bass (1998) and Avolio, Bass, and Jung (1999) constructed a complete behavior style and gave transformational leadership a style. Two scholars clearly proposed two leadership styles: transformational leadership and transactional leadership.

Yao (2014), a Chinese scholar, proposed that the executive must have the ability to discover capable people and put them in suitable posts, to explore and innovate, and to play a leading role. Some scholars divide Chinese hospital executives into two groups: excellent performance

group and general performance group and propose that the ability of excellent performance group executives plays an important role in leadership, change, decision-making and innovation (Lu, 2009; Huang & Lu, 2010; Lu et al., 2011). Some scholars believe that the executive not only needs to implement the government's instructions, but also be responsible for the operation of the hospital. He or she must have the management ability of planning, decision-making, innovation, comprehensive analysis, as well as the leadership quality of motivating subordinates, delegation, integrity, fairness, and professionalism (Sun, 2012). Hofstede (1993) believes that as a process of social influence, the concept and composition of leadership may vary with different national cultures. In the context of Chinese culture, there is also an important dimension in the competence of executives, namely, moral character (Westwood, 1993; Ling, Chia, & Fang, 2000; Shi, Wang, & Li, 2002).

For the measurement of leadership, we adapted from the Multifactor Leadership Questionnaire (MLQ), a leadership evaluation tool developed by Bass and Bernard (1999), which includes four dimensions of leadership charisma, inspiration, intelligent stimulation, and personalized care. Scholars Li and Shi (2005) compiled the Transformational Leadership Questionnaire (TLQ) in accordance with the four-dimensional structure of MLQ's transformational leadership, including morality, vision inspiration, leadership charisma and personalized care. Based on Li and Shi's (2005) TLQ, this dissertation adds the question item of transactional leadership (Bass & Bernard, 1999) and uses Wei, Lee, and Kwan's (2016) scale as reference to form the leadership measurement scale.

Chapter 3: Research framework and Hypotheses

3.1 Research framework

The dissertation explores three research questions: (1) What are the key components of professional management competence and role pressure of Chinese hospital executives? (2) What are their key influencing factors? (3) How do professional management competence and role pressure affect job satisfaction and organization performance?

To address research question 1, we conceptualize hospital executive's professional management competence based on literature review and interviews with hospital executives (please refer to chapters 4 and 5 where the methodology and results are presented).

To address research questions 2 and 3, we develop two research frameworks based on the literature review in Chapter 2, as presented below.

On the one hand, framework 1 addresses research question 2, exploring the key influencing factors of professional management competence and role pressure. In this framework, we mainly study whether and how training, policy uncertainty and leadership will affect professional management competence and role pressure (shown as Figure 3.1). The rational for the hypotheses' development is presented in sections 3.2.1 to 3.2.3.

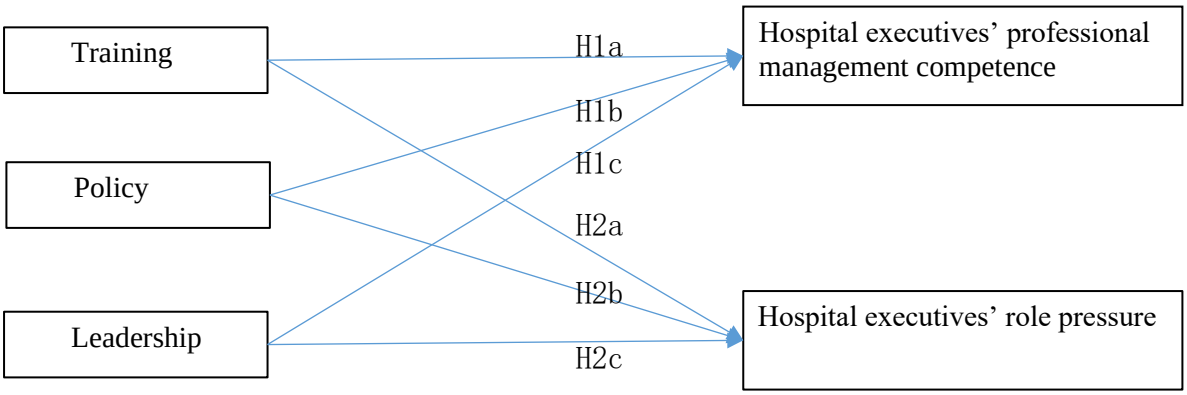

Figure 3.1 Framework 1: Influencing factors of professional management competence and role pressure

On the other hand, framework 2 responds to research question 3, which is how do professional management competence and role pressure affect executive job satisfaction and organization performance? In this framework, we mainly study the outcomes, i.e., whether and

how professional management competence and role pressure will affect executive job satisfaction and organization performance (shown as Figure 3.2). The rational for the hypotheses' development is presented in sections 3.2.4 to 3.2.5.

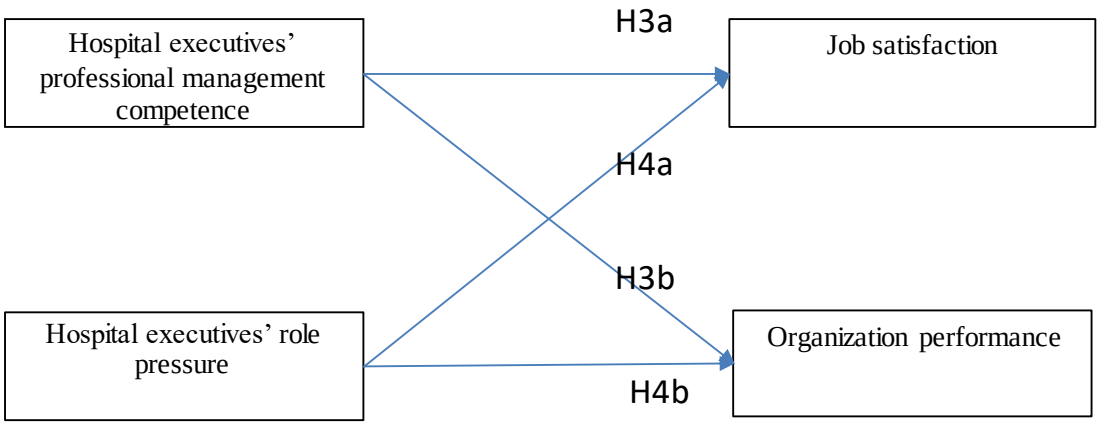

Figure 3.2 Framework 2: Outcomes of professional management competence and role pressure

The following describes the rational for the development of the hypothesis and the expected relationship between the variables in both frameworks.

3.2 Research hypotheses

3.2.1 Influencing Factor: Relationships between training and professional management competence and role pressure

Human resources are the most valuable resources of enterprises. Training refers to the systematic learning and knowledge acquisition methods that can improve the performance of individuals or organizations. Training is an effective way to improve personal knowledge, skills and attitudes, and the result is to improve the performance of individuals and organizations (Aguinis & Kraiger, 2009). The existing literature on training shows that it has a positive impact on individuals and organizations. In medical services in China, both the organizers and participants of management training adhere to this concept. The hospital management training in China began almost at the same time as the professionalization of the executive. Every hospital manager has actively or passively participated in management training with various forms and rich contents. The organizers and participants of hospital management training hope to learn the skills needed to manage the hospital from the training, so as to improve the management ability and lead the hospital to achieve the desired performance (Shi, Zhou, & Xu, 2018).

Training can effectively improve the ability. On the one hand, training can effectively improve tacit skills (Barber, 2004) and professional skills (Davis & Yi, 2004; Robertson, 2005); on the other hand, learning through specialized training courses can improve the ability of self-control and self-management (Frayne & Geringer, 2000; Driskell, Johnston, & Salas, 2001; Hill & Lent, 2006; Satterfield & Hughes, 2007). Training can also improve leadership (Day, 2000; Dvir, Eden et al., 2002; Collins & Holton, 2004), and acquire more management skills, improve management ability, including cooperation ability, planning ability and problem-solving ability (Butcher, 2011; Patel et al., 2014).

The advantage that doctors become managers after management training is that through systematic learning of management knowledge, clinical expertise and management skills can be combined to effectively manage hospitals (Sherrill, 2000).

In conclusion, the following hypothesis is proposed:

H1a: Training affects the executive's professional management competence.

In this dissertation, role pressure consists of four dimensions: role conflict, role ambiguity, role overload and role gap. The study of training and role pressure mainly focuses on the influence of role overload. This is due to the direct effect of training on ability improvement. Through skill training for specific jobs, the work skills of trainees can be effectively improved, so as to reduce the gap between themselves and the ability required to achieve the work objectives, and thus improve the work efficiency, reduce the working time and intensity, and reduce the role overload. In other words, training can effectively reduce the role overload (Chen et al., 2007; Chiu, Yeh, & Huang, 2015).

Most managers “learn on the job”. The consequence of the lack of effective training is not only the inefficient operation of the hospital, but also the suspicion of the managers on their own ability, which further leads to the ambiguity of self-perception and the role conflict (Henry, 1987; Listed, 1987; Ackerly et al., 2011).

In conclusion, the following hypothesis is proposed:

H2a: Training affects executive's professional management role pressure.

3.2.2 Influencing Factor: Relationships between policy uncertainty and professional management competence and role pressure

In the context of China's new medical reform, the characteristics of policy instability are particularly prominent. The most typical example is the pilot policy (Bailey et al., 2017). For example, in 2015, the Chinese government tried to launch a pilot reform of public hospitals to

cancel drug markups. Under the unclear policies, the executives whose hospitals were selected as the pilot hospitals should implement policies on the one hand, and on the other hand, it is more difficult to ensure hospital performance and the interests of employees. This has resulted in a certain degree of role conflict of executives, and the pilot policies have caused role ambiguity. Therefore, role pressure is inevitable. The confusion of executive's work will also affect job satisfaction and organization performance.

The instability of policy is one of its biggest characteristics (Chen, 2003). Especially in a complex system or multi-objective task, the uncertainty of policy is more prominent (Walker, Rahman, & Cave, 2001). To seek organization performance in the unstable environment, managers are required to have a higher level of operational ability, and to be able to seek development space in the ideal and reality, as well as the multi-agent interests of the game. In the process of policy implementation, the internal and external conditions are not immutable. In the game between stakeholders, the degree of policy control is constantly changing, and the degree of influence on the organization is also constantly changing. Leaders need to adjust the strategic plan according to the degree of policy influence, control the strategic process, and have the ability to solve problems (Mahoney, Roush, & Bandy, 2003; Hanaki et al., 2016).

In conclusion, the following hypothesis is proposed:

H1b: Policy uncertainty affects the executive's professional management competence.

The impact of policy stability on leaders and organizations lies in the fact that the degree of policy stability and tasks faced by individuals, or unclear responsibilities and rights of individuals will lead to the inability to define roles. Therefore, in order to maintain individual high performance, it is necessary to give clear signals or definitions to avoid role ambiguity (Kanbur & Canbek, 2017).

In conclusion, the following hypothesis is proposed:

H2b: Policy uncertainty affects the executive's professional management role pressure.

3.2.3 Influencing Factor: Relationships between leadership and professional management competence and role pressure

The rise of new leadership theories has led the concept of leadership to be increasingly seen as an act or course of action that leads others to achieve organizational goals based on shared values and is no longer a concept of power. The most representative of the new leadership model is transformational leadership. Transformational leaders always show the characteristics of autonomy, morality, foresight, and dedication (Burns, 1978), and are charming, inspiring,

individual, considerate, and motivating to others (Bass, 1985).

Chinese hospitals are generally facing the requirements of transformation and development. It is necessary to give full play to the enthusiasm and creativity of all hospital staff to solve problems, and also to help the hospital achieve its mission with a certain dedication. There is an urgent need for an executive with transformational leadership style, who can influence employees through ability and charm, establish a more harmonious working atmosphere, stimulate employees' work enthusiasm and creativity, form a more responsible and creative team, improve organization performance through employee performance improvement, and then reduce the role pressure of the executive to generate higher job satisfaction.

Leadership research mainly focuses on the change of employees' behavior and organizational behavior, and there are few researches on the influence of individual leaders, such as ability, role and job satisfaction.

The first task of transformational leaders is to understand the threats and opportunities brought to the organization by the external environment, to carry out SWOT analysis in combination with internal resources, to visualize and conceptualize the results and express them as vision, goal and mission, so as to motivate and lead the team, and to analyze and solve problems around the goal in practice to achieve organization performance (Keller, 1995), so transformational leaders should have strategic ability and problem-solving ability (Kindy, Shah, & Jusoh, 2016).

In conclusion, the following hypothesis is proposed:

H1c: Leadership affects executive's professional management competence.

Chinese hospital executives play various roles such as government officials, hospital managers and doctors. From both the fierce changing external environment of the hospital or the choice of their own career path, there are role conflicts and role ambiguity. However, as transformational leaders, they generally encourage innovation in their work, provide constructive feedback (Burns, 1978), analyze the causes and nature of conflicts, adjust their own state, and constantly revise their goals according to policies, so as to relieve role pressure to a certain extent.

In conclusion, the following hypothesis is proposed:

H2c: Leadership affects executive's professional management role pressure.

3.2.4 Outcome: Relationships between professional management competence and job satisfaction and organization performance

McClelland (1973) considers competence to be a potential characteristic of a person's ability to achieve outstanding performance in a job. Rychen and Salganik (2001) believes that competence is the ability to successfully complete a series of complex requirements or perform a series of complex tasks. Regardless of the perspective or grounds, it is always closely associated to excellent performance and job responsibilities (Spencer & Spencer, 1993; Chen & Lei, 2004). The career paths of Chinese hospital executives are usually like "getting promoted to be administrators because of outstanding performance as doctors" (Shi, Zhou, & Xu, 2018) and they are the best in the industry in terms of medical service, teaching, and scientific research. They have generally gone through the career development as doctors, department executives, vice presidents, and presidents. They are familiar with hospital work, have management experience, have certain competence, fairly satisfied with the job, and can lead the hospital to achieve ideal performance.

Job satisfaction is an emotional state of happiness or affirmation that employees show toward work, so satisfaction is a subjective attitude and emotion of people towards work (Armstrong, 2014). Also, some scholars believe that job satisfaction is an individual's evaluation of existing working conditions, and Spector (1997) interprets job satisfaction in general as saying that he likes or dislikes work. For the same individual conditions, such as ability and energy, people will have different perceptions of the same working conditions, such as the number of tasks, the nature of work, salary, learning opportunities, promotion conditions and then have a positive or negative attitude towards work.

Existing research shows that competence has a positive impact on employees' job satisfaction, devotion, and work engagement (Eby, Butts, & Lockwood, 2003; Arthur, Khapova, & Wilderom, 2005; Colakoglu, 2011; Kong, Cheung, & Song, 2011; Francis-Smythe et al, 2013; Zhou et al., 2015). Because they set career goals, identify the job of choice, and establish a high-level work environment (Suutari & Makela, 2007). Research shows that work environment is highly correlated with job satisfaction (Wooden & Warren, 2004; Suifan, 2019). The more you like your current work environment, the higher your job satisfaction will be (Muindi & K'Obonyo, 2015).

Kong (2013) proposed that professional competence is highly correlated with professional satisfaction, thereby increasing job satisfaction and job involvement. Therefore, some scholars believe that a qualified professional competence model can effectively predict professional

success (Francis-Smythe et al., 2013). Yang (2007) also demonstrated that problem-solving and planning skills are related to job satisfaction.

In summary, this study proposes:

H3a: Executive's professional management competence affects job satisfaction.

Organization performance includes multiple aspects, including financial indicators such as income and profit margin, and growth indicators such as scale and efficiency. Managers' ability is the most precious resource of human resources in the enterprise. Managers with higher ability will excel in daily work. More efficient management help to achieve better organization performance (Davidsson, 1991; Hart & Quinn, 1993; Papke-Shields & Malhotra, 2001; Fey, Morgulis-Yakushev, & Björkman, 2009; Andreou et al., 2015). Increasing competition among enterprises requires managers to pay more attention to the creation of core competitiveness, and the strength of core competitiveness depends mainly on the performance of human resources within the enterprise (Muindi & K'Obonyo, 2015). From the perspective of resource-based theory, human resources are in line with the four attributes of value, scarcity, irreproducibility, and irreplaceability.

In early research on competence, some scholars (e.g., Vroom, 1964) believed that job performance was a function of competence and motivation and could even simply depend on the strength of competence (Porter & Lawler, 1968). With the deepening of work performance research, Borman and Motowidlo (1997) divided work performance into task performance and situational performance. Capabilities and task performance are highly related. Based on the research of the two scholars, the relationship between ability and job performance has gradually become clear, and it is believed that ability and task performance are highly related. Spencer and Spencer (1993) demonstrated that excellent job performance results from a special combination of competences. Therefore, the success of an enterprise is first and foremost the competence of employees. It is necessary to study the factors that affect employee performance, especially the competence of employees (Vroom, 1964; Porter & Lawler, 1968; Rychen & Salganik, 2001; Muindi & K'Obonyo, 2015).

Some scholars use organizational growth theory to explain organization performance and put forward the theory of enterprise life cycle. The theory shows that the development process of all enterprises always goes through four stages: beginning, growth, maturity, and decline. Entrepreneurs' ability is one of the key factors affecting the growth of the organization, that is, accelerating growth, maintaining maturity, and delaying decline (Gupta & Samapti, 2013). Barringer and Bluedorn (1999) describe entrepreneurs as people who explore the environment, discover opportunities, and use these opportunities after proper analysis, and naturally become

the key to the success of business operations. A study of small businesses concluded that small business growth depends on entrepreneurial vision, management skills, and training experience. Without these factors, small businesses generally fail (Gaskill et al., 1993). Some scholars have described the growth of enterprises as a function of entrepreneurial decision-making (Gilbert, Mcdougall, & Audretsch, 2006). Andreou et al. (2015) conducted research on managerial capabilities and organization performance in the context of the 2008 financial crisis and found that managerial capabilities are highly positively related to organization performance. Managers often appear in teams for day-to-day management. The heterogeneity of the team and the number of MBAs determine the level of the team (Bontis, Switzer, & Huang, 2007).

Different entrepreneurs have different understandings of growth and believe that organizational growth can be measured in terms of financial indicators, such as revenue growth, and can also be represented by market position, product quality, and customer satisfaction (Gaskill, Van Auken, & Manning, 1993). The role of managerial capabilities before and after mergers and acquisitions is also crucial and has a decisive effect on the financial performance of the company (Chemmanur & Paeglis, 2005; Chemmanur & Simonyan, 2010). Managers with top management capabilities are a key factor in the development of the company, especially for decisions such as mergers and acquisitions, spin-offs, diversification decisions, dividend policies, interest coverage and capital expenditure levels (Bertrand & Schoar, 2003). There is a positive correlation between leadership skills and productivity, increased profitability, reduced rejection rates, and increased customer satisfaction (Porras & Anderson, 1981).

Complex organizations like hospitals need professional executives and managers (Drucker, 2008; Daire, Gilson, & Cleary, 2014). The improvement of professional ability has a significant effect on promoting hospital performance (Hambrick & Mason, 1984; Reiter et al., 2009; Milad et al., 2015; Pham, 2015). However, the competence required by managers in different positions is different. Middle managers are more likely to require execution competence. Middle managers with strong execution have a positive correlation with organization performance, and senior leaders with a strong desire for innovation. It maintains the same relationship with organization performance. Different positions or job responsibilities require managers to have different competencies. Only when the manager's activities are consistent with the organization's goals, strategy, and cultural environment can higher performance be achieved.

H3b: Executive's professional management competence positively affects organization performance.

3.2.5 Outcome: Relationships between role pressure and job satisfaction and organization performance

In this study, role pressure includes four dimensions: role conflict, role ambiguity, role overload and role gap. Deviations in role cognition can lead to role conflicts and role ambiguity. By definition, role conflicts generally occur when facing “impossible” tasks: when deadlines are approaching, and when confronting two superiors who disagree. The situation in which the role is blurred is relatively simple. Generally, the information needed to complete the task is incomplete and inadequate, which leads to overwhelming (Barber et al., 2014; Shi et al., 2018).

Without doubt, there are role conflicts and role ambiguity between the roles played by the hospital executives, and accordingly role overload will be generated. In the new environment of Chinese hospitals, role pressure will become more prominent and more obvious, which will have more impact on the executive. For example, the government requires hospitals to make more use of public welfare. On the one hand, hospital executives must perform tasks, and on the other hand, they must consider maintaining the operation of hospitals without the original funding, motivating medical staff to work better, allowing the hospital to develop. The conflicting roles are more and more obvious, so more and more executives start to complain about their jobs, even want to give up, and show dissatisfaction with the working environment and status, which will further affect the executive's commitment in hospital management and affect the hospital’s development. Because job satisfaction is highly correlated with job performance, employees with higher job satisfaction generally have excellent job performance.

Whether conflicting or overwhelmed, the results generally lead to dissatisfaction, anxiety, and ultimately low productivity (Rizzo & Lirtzman, 1970; Burke & Scalzi, 1988). In the role stress study, the dependent variables include job satisfaction, life satisfaction, job input, job performance and other variables, but work satisfaction and job-related stress are the most studied (Burke & Scalzi, 1988).

Personal perception of the role is the root cause of satisfaction. According to the theory of expectations, employees' perceptions and reactions to roles influence their behavior. Cognitive factors include personal needs, values, role expectations (Vroom, 1964; Muindi & K’Obonyo, 2015). Response refers to the degree of recognition of incentives. Expectancy theory emphasizes that incentives can be divided into intrinsic and extrinsic, and the recognition of the value of intrinsic and extrinsic rewards encourages people to behave (Lewin, 1997). These rewards include full and equal compensation, working conditions, development opportunities, job security, social attributes, work and life balance, workload, and stress. From a perception

perspective, it is more difficult to distinguish which rewards will bring complete internal or external motivation. If the cognition and perception of roles are consistent, there will be higher job satisfaction, reasonable motivation at work, and higher job satisfaction.

Winter, Taylor, and Sarros (2000) believe that the work environment is highly correlated with job satisfaction (Muindi & K'Obonyo, 2015). The working environment includes factors such as role pressure, nature of work, and subordinate relationships. These factors directly or indirectly affect people's experiences, attitudes, and behaviors.

Studies have found a positive relationship between salesperson role pressures and job satisfaction (Teas, 1983; Jackson & Schuler, 1985; Johlke et al., 2000). For non-sales workers, there is generally a negative relationship between role pressure and job satisfaction (Frey, Stahlberg, & Fries, 1986). Role pressure can lead to lower job satisfaction for medical staff (Burke & Scalzi, 1988). Some scholars have found that the relationship between perceived role conflicts and ambiguities and job satisfaction needs further verification, and there may be moderating variables between role pressure and job satisfaction (Fisher & Ashkanasy, 2000).

The results of research on role pressure and job satisfaction are different in different industries. This is due to the subjectivity of job satisfaction evaluation. Even in the same industry and under different working conditions, including different role pressures, workloads, job types, and subordinate relationships, job satisfaction will be affected. It is necessary to study the impact of the role pressure of Chinese hospital executives on their job satisfaction.

In summary, this study proposes:

H4a: Executive's professional management role pressure affects job satisfaction.

The object of this study is Chinese hospitals, including public hospitals and non-public hospitals. There are non-profit and for-profit properties. Therefore, generic indicators are used, including indicators that reflect financial and non-financial performance.

Role conflict and role ambiguity can affect organization performance. If the organization's command comes from a single and very clear superior, it will be more efficient than a command without a clear authority (Shatto, 2004; Bossert & Mitchell, 2011).

Research shows that role pressures more often have an effect on organization performance through mediator variables. Among these mediator variables, job satisfaction is more common. Organization performance is also determined by individual behavior. The impact of role pressure on personal job satisfaction generally also affects organization performance (Burke & Scalzi, 1988). The role theory also holds the same view. If the behavioral requirements of the role are inconsistent, then the role will feel pressure and show dissatisfaction, resulting in reduced efficiency. But the relationship between job satisfaction and organization performance

is not clear. A happy employee is not necessarily a high performing employee (Musgrove, Ellinger, & Ellinger, 2014). Employee role pressure can also manifest as work stress (Hamidi & Eivazi, 2010). A study of managers of multinational corporations found that role conflict can lead to higher work pressure. Working under high pressure can affect the achievement of organization performance goals (Mohr & Puck, 2007).

Job performance is also a common mediator variable for scholars. There is a high positive correlation between personal work performance and organization performance. The better the personal work performance, the better the organization performance. Studies by some scholars have shown that role conflicts, role ambiguity, and role pressure caused by role overload can lead to lower personal work performance, which affects the achievement of organizational goals. Some scholars have proposed a U-shaped theory of the relationship between the two and believe that stress and job performance are U-shaped. That is, as stress increases, work performance improves. After reaching a certain level, role pressure will have a negative impact on job performance and affect organization performance.

In summary, this section proposes the following hypothesis:

H4b: Executive’s professional management role pressure affects organization performance.

In summary, 10 hypotheses presented in this study are shown in Table 3.1:

Table 3.1 Summary of hypotheses

No.	Hypotheses
H1a	Training affects the executive's professional management competence
H1b	Policy uncertainty affects the executive's professional management competence
H1c	Leadership affects executive's professional management competence
H2a	Training affects executive's professional management role pressure
H2b	Policy uncertainty affects the executive's professional management role pressure
H2c	Leadership affects executive's professional management role pressure
H3a	Executive’s professional management competence affects job satisfaction
H3b	Executive’s professional management competence affects organization performance
H4a	Executive’s professional management role pressure affects job satisfaction
H4b	Executive’s professional management role pressure affects organization performance

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Chapter 4: Research Methods

4.1 Overall research methodology

From the perspective of the research method, the method used in this research can be divided into qualitative and quantitative research, each containing a variety of specific research methods. Both methods have their own advantages and disadvantages. In order to solve research problems more comprehensively, studies often combine quantitative research with qualitative research (Lund, 2012). One kind of combination is to use some specific methods and techniques of qualitative research in quantitative research, and another way is to use some specific method of qualitative research to help researchers to interpret the results of statistical analysis in quantitative research. The third is a combination of qualitative and quantitative methods in the true sense, using qualitative and quantitative research to explore different aspects of the overall problem (Morgan, 2013).

Different research methods are chosen on the basis of the purpose of the study. The purpose of this dissertation is to describe the influencing factors and outcomes of competence and role pressure in the professional management of Chinese hospital executives. Survey research is a quantitative study, the basic elements include sampling, questionnaires, scales, statistical analysis, and related analysis. However, in the formation of the questionnaire and the interpretation of related relationships, the actual experience and true thoughts of the respondents are needed as data, and the actual situation must be understood through interviews.

Therefore, this dissertation mainly uses two methods of investigation and field research. In terms of the order of the research process, it includes interviews and questionnaires, as the former contributes to the development of the latter.

4.2 Interviews

4.2.1 Interview overview

Interviews are an important method of gathering information. Depending on the content of the interview and the degree of formalness of the program, it can be divided into semi-structured interviews and structured interviews. This thesis uses semi-structured interviews, also known

as in-depth interviews or free interviews, are not based on structured questionnaires or fixed procedures, but are based on only subject and scope of the interview, and the interviewees have a free conversation about the subject and scope of the subject (Feng, 2009). The purpose is to obtain a wealth of qualitative information through interviews, and to induct and summarize conclusions from the semi-structured interviews. The main purpose of this dissertation using semi-structured interviews is to focus on the research topic of the professional management of hospital executives through face-to-face conversation with the interviewees. Based on the literature research, the research object and topics further focus, and further enrich the content, and clarify the dimensions and the relationship between them.

4.2.2 Interview process

Based on the methodological points of the semi-structured interview, the implementation process is divided into the following steps

(1) Develop an outline of interviews

Research the literature around the research theme, and design questions based on the dimensions of the variables. The questions revolve around the interviewer's understanding and definition of the variables, including three aspects: variables including dimensions, relationships between variables, and relationships between dimensions.

(2) Identify the interviewees

Interview subjects are 10 executives. In order to obtain more valuable information, attention is paid to the representativeness of the selection of executives as interview subjects. Hospital grade is limited to Grade III B and Grade II. Based on the research subject's requirements for the executives, 21 executives were shortlisted based on the executive’s age, personal experience, professionalism, hospital size, and location. Finally, 10 executives were selected for interviews.

(3) Make an appointment for the interviewee's time

Use the formal interview form, one interview per day.

(4) Process interview materials

Record the entire interview and adjust the interview questions according to the interviewees after the interview. Then start the next interview.

4.2.3 Interview protocol

The interview protocol is divided into five parts as shown in Annex A- Interview Protocol. The first part helps understanding the basic situation of the individual, while the second part is the

view and difficulty of the executive's professional management. The third part is about the content of role conflict, role ambiguity and role overload in the professional management of hospital executives and explores the impact of role pressure on their job satisfaction and organization performance. The fourth part discusses the dimensions of executive's professional management competence and explores the impact of competence on job satisfaction and organization performance. The fifth part is about the influencing factors of the executive's professional management.

4.3 Questionnaire survey method

This study is mostly based on quantitative research, and questionnaire survey is a more commonly used and effective method. The scientific nature of the questionnaire preparation method and the normative design process affect the reliability and value of the study directly. Therefore, it is one of the key contents of the study.

4.3.1 Questionnaire design

The design of the questionnaire refers to the definition and measurement of variables, which is the core step of the questionnaire survey, also known as the operational process of the concept. The process of studying and operating abstract concepts in detail and ultimately explaining them with empirical observations (Babbie, 2005; Feng, 2009). The most common method of conceptual manipulation is the scale. The design of dimensions and indicators is the basis of the accuracy of the scale measurement. Therefore, the following measures are taken to ensure the accuracy of the measurement.

4.3.1.1 About variables and dimensions

Variables and dimensions are the basic elements of the theoretical framework, reflecting research objectives as the primary consideration. Clarify the starting point of the questionnaire design, and only design around the questions studied and the variables to be measured. In two steps: the first step is to collect the existing research content from the relevant research through literature retrieval and review, the research of the predecessors is the basic starting point for the construction of variables and dimensions of this study. The second step is to interview representative people and gather the views of industry experts on the relationship between variables and dimensions, as well as suggestions for research design. Effort is made to ensure that the questionnaire design is closer to the reality and better reflects the research purpose.

4.3.1.2 About indicators

Indicators are the basis for measurements and visual materials for a large number of respondents. Design indicators should reflect the comprehensiveness and logic of the research variables, the readability of the subjects, and the measurability of the indicators. The first step is to collect dimensions from previous studies related mature or classical scales, so that the questionnaire's reliability and validity can be guaranteed to a certain extent. The second step is to edit the indicator language to make it as easy to understand as possible. The third step is to design comparable indicators and edit some indicators to make them easier to measure.

4.2.1.3 About the scale

This study questionnaire uses the Likert-type scale 7-point scale. Fully considers the personal circumstances of the respondent, such as repeatedly reviewing the interpretation of the scoring rules of the Likert-type scale in the process of the scale improvement. The first draft only explained the meanings of 1 and 7. In the return visit, the meanings of 1 to 7 were explained based on the feedback. Before the pre-test, the length of the questionnaire and the ease of understanding of the Likert-type scale interpretation were decided. It explains only the meaning of 1, 4, 7, where one means totally disagrees, four means neutral and seven means totally agree.

In addition, we fully considered the various factors that hinder the questionnaire. Subjectively control the number of questions to avoid investigators' boredom. Questions related to privacy are placed at the end of the questionnaire.

4.3.2 Questionnaire development process

The first step is to consult the literature. Collect basic variables and measure dimensions.

The second step is to conduct an interview, exploring variables, dimensions, and the relationships between them.

The third step is to formulate the questionnaire, and repeatedly add or remove questionnaire entries according to the design principles of the questionnaire, modify the expression of the questionnaire, hope to provide true feedback on the survey content, and also strive to make the survey questions easy to understand and easy to answer.

The fourth step is to pre-test and modify the questionnaire for the first time. At this stage, subjective evaluation is used, and non-random sampling is used to return interviews to interviewees. The purpose is to provide feedback on interview-based questionnaires and test the initial questionnaire. The questionnaire was modified based on comments, and questions about China's health care system reform policy were added; the content structure was adjusted

to include privacy and personal information in the second half of the questionnaire.

The fifth step is pilot test. We used the questionnaire revised after the pre-test to run a pilot test, and out of 100 copies issued, 70 copies were recovered, representing the recovery rate of 70%. Pilot test response time took an average of 20 minutes. The pilot uses factor analysis to check the structural validity of the questionnaire, and to modify the topics with relatively scattered factor loads. Before the pilot test, 10 interviewees in the pre-test affirmed the content of the questionnaire and thought that the design of the question was reasonable and there were no extra questions. Therefore, the expression of the factors of load dispersion is modified to avoid the misunderstanding of the question by the respondent.

Making the questionnaire took 7 months from the first draft to the final draft. 15 drafts were revised repeatedly. A formal distribution questionnaire was finally formed, with a total of 104 questions. The final version is presented on Annex B.

4.4 Questionnaire items and sources

Through the above steps, of interviews and questionnaire development, all the measurement questions of the 7 variables involved in this study are obtained. There are 10 questions that reflect the executive's professional management competence (Table C.2). There are 15 questions that reflect the executive's professional management role pressure (Table C.3). There are 5 questions reflecting the personal job satisfaction of the executive (Table C.4). There are 4 questions reflect the organization performance of the hospital (Table C.5). There are 18 questions that reflect the influencing factors: 5 in training (Table C.6), 4 in policy uncertainty (Table C.7), and 9 in leadership (Table C.8).

(1) Question design for the executive’s professional management competence

Executive's professional management competence includes three dimensions: strategic planning ability, control ability and problem-solving ability. The program competency questions are from Man et al. (2002) and Kearns and Sabherwal (2007). Control Capability Questions from Eisenhardt and Martin (2000), Wu et al. (2010) and Schein (2010). Problem-solving ability Questions come from Bateman and Crant (1993), Seibert, Crant, and Krainer (1999), Yang (2007), Li et al. (2014) and Mainemelis, Kark, and Epitropaki (2015). They are combined with the interviews to modify the questions, and then the formation of the final scale. The measurement items used in the final questionnaire, also as the Competence Scale of Chinese hospital executives, are presented in Table C.2 in the Annex C.

(2) Question design for executive role pressure

Executive professional management role pressure includes four dimensions: role conflict, role ambiguity, role overload, and role gap. It uses the role pressure measurement of Rizzo and Lirtzman (1970) and, according to Siegall (2000), Li and Shi (2005), Ren (2009), the study of Kanbur and Canbek (2017) and others to adjust the questions and then modified them according to the interview to form a final scale. The measurement items used in the final questionnaire are presented in Table C.3 in the Annex C.

(3) Question design for job satisfaction

Job satisfaction in this study is measured using two dimensions: career satisfaction and personal growth (Moorman, 1993; Spector, 1997; Intaraprasong et al., 2012). The questions were modified based on the interviews to form the final scale. The measurement items used in the final questionnaire are presented in Table C.4 in the Annex C.

Question design for organization performance

Organization performance uses subjective assessment questions. Scale questions are derived from the study of scholar Covin and Slevin (1991) and based on Jia (2013) scholars. The questions are modified to form the final scale. The measurement items used in the final questionnaire are presented in Table C.5 in the Annex C.

Question design for influencing factors

The influencing factors include three variables that affect the professional management competence and role pressure of Chinese hospital executives, including training, policy uncertainty, and leadership.

In terms of training question design, considering the availability of data, this study uses single-dimensional measurement to develop measurement indicators for training characteristics. The source of the indicators is Aragón-Sánchez et al. (2003). The training content and form are the main factors that determine the effectiveness of the training. According to the interviews, the five questions that the executive is most concerned about are listed as questions. The measurement items used in the final questionnaire are presented in Table C.6 in the Annex C.

Regarding the design of policy uncertainty questions, health policies determine the hospital's strategic goals and plans. The current policy instability has also caused conflicts and ambiguity in the role of the executive, which is an important factor influencing the professionalism and role of the executive. Based on the interviews, we listed the five health reform policies that the executive is most concerned about as questions, and observed their relationship with the professional role and competence of the executive. The measurement items used in the final questionnaire are presented in Table C.7 in the Annex C.

In terms of leadership question design, we borrowed from Bass (1998), Li and Shi (2005),

Wei, Lee, and Kwan (2016) leadership scale, and related research and interviews to form a questionnaire, from leadership vision and leadership care. The measurement items used in the final questionnaire are presented in Table C.8 in the Annex C.

In conclusion, there are seven variables and fourteen dimensions.

Variable 1: Chinese hospital executive's professional management competence, which has three dimensions: planning ability, control ability, and problem-solving ability.

Variable 2: Chinese hospital executive's professional management role pressure, which has four dimensions: role conflict, role ambiguity, role overload, and role gap.

Variable 3: Job satisfaction, which has two dimensions: career satisfaction, and personal growth.

Variable 4: Organization performance, which has only one dimension.

Variable 5: Training, which has only one dimension.

Variable 6: Policy uncertainty, which has only one dimension.

Variable 7: Leadership, which has two dimensions: leadership vision, and leadership care.

4.5 Data collection

After the pilot test, the effectiveness of the questionnaire in measuring research topics can be determined. On this basis, this section introduces the process of sample selection, questionnaire distribution and recovery.

4.5.1 Sample selection

In this study, a questionnaire survey was used to collect the research data. Before the questionnaire was issued, sample selection was performed, that is, sampling. The quality of the sample determined the applicability and extrapolation of the research conclusion (Feng, 2009). In order to ensure that the selected sample is consistent with the research purpose, before issuing the questionnaire, the sample selection criteria are specified as follows.

4.5.1.1 Sample hospital size

The research hopes that the hospitals surveyed should be of a certain size. The standard is that the number of beds is more than 500. The Grade III and Grade II hospitals are selected, including public and non-public hospitals.

4.5.1.2 Interviewee’s position

The research objects of this thesis are the executive, party secretary, deputy executive, deputy secretary, chief accountant, and executive's assistants who have leadership and management responsibilities.

4.5.1.3 Sample area where the hospital is located

To make the results more representative, the samples selected are not limited to the Shanghai area and are moderately distributed in the eastern region around Shanghai, including Shanghai, Zhejiang, Jiangsu, and western regions around Xi'an, including Shaanxi province.

4.5.1.4 Sample hospital operation time

Hospitals with a history of more than five years are selected to ensure that the hospital is running smoothly, and the executive's personal and organization performance is easy to measure.

4.5.2 Sample size

The sample size is one of the key indicators that determine the effectiveness of statistical analysis results (Feng, 2009). There is currently no uniform standard for the sample size. In general, the indicator has a 1:5.7 relationship to the sample size. Based on the previous literature review and interviews, this study finally refined 104 indicators, and the effective sample size was 343.

The number of samples should also be considered when calculating the sample size. The recovery rate is an indicator of the representativeness of the respondents' sample (Feng, 2009), and is one of the indicators of the importance of the survey results to the overall representation of the results (Feng, 2009). Considering the classification of the pilot test sample recovery rate and sample recovery rate, the plan is generally about 50% (Feng, 2009).

4.5.3 Steps of questionnaire distribution and collection

This study collects the survey data using two questionnaire formats: paper questionnaire and electronic questionnaire.

4.5.3.1 Paper questionnaire

The use of paper questionnaires is mainly for some executives that are not good at using mobile phones and other digital tools. Electronic version is provided the respondent, and then print out, answered, scanned, and sent to the investigator, who manually entered the answer into the

electronic questionnaire, made a record and indicated the source.

4.5.3.2 Electronic questionnaire

The electronic questionnaire was adopted during the pilot test. The electronic questionnaire was created using internet-based tool and distributed via WeChat. Network distribution and collection have the following advantages:

(1) Distribution and collection costs are low. No need to print or mail the questionnaire, and it can arrive instantly. Time and labor costs are lower than paper questionnaires.
(2) High response rate. As long as the respondent has WeChat, they can be contacted and confirm that they received the questionnaire.
(3) Statistical analyses are convenient. Software has the ability to automatically organize data, import data and analyze directly.
(4) Information is reliable. The WeChat feature can track the start and end time of each electronic questionnaire response, as well as the IP address of each questionnaire answer, and ensure the degree of seriousness of the response based on time, location, and device and thus ensuring the trustworthiness of the data source.

In order to motivate the respondents to fill out the questionnaire seriously and improve the authenticity and recovery rate of the survey, the survey respondents were provided with two rewards. One was to offer the valid respondents with the research report of the survey, and the other was luck draw in which one out of 50 valid respondents get a prize. In the process, a reminder was sent two weeks after the questionnaire was issued. It took four weeks from sending the questionnaire to full collection.

4.5.3.3 Questionnaire collection

Questionnaires were distributed in three batches, with a total of 780 questionnaires. Of these, 410 were collected, representing a 52.5% collection rate. Considering 67 invalid questionnaires due to missing items, the final sample consists of 343 valid questionnaires representing a 43.9% collection rate.

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Chapter 5: Results

This research combines qualitative and quantitative research methods, using interview method and questionnaire survey method to collect the research data, respectively. This chapter describes the results of the two methods separately and discusses them further.

5.1 Qualitative results

Qualitative results mainly describe and analyze the data obtained from the interviews. The purpose of the interview has been explained in detail in Chapter 4, which is mainly to design the variables and dimensions more accurately.

5.1.1 Characteristics of interviewees

The research topic is professional management of Chinese hospital executives. Ten representative executives were selected and interviewed based on the integrity of the interview content.

5.1.1.1 Hospital basic situation description

The basic information of the interviewees' hospitals is provided in Table 5.1 and Table 5.2 below.

About the grade of the 10 hospitals, four are Grade III A hospitals (Table 5.1), one is Grade III B hospital, four are Grade II A hospitals, and one without a rating (Table 5.2).

Regarding the number of beds, five out of 10 hospitals have 1,000 beds and the other five have 500-1,000 beds.

In terms of the number of employees, two hospitals have more than 2,000 employees, four have more than 1,000 employees, and the remaining four have 300-400 employees.

Table 5.1 Background information of the interviewees' hospitals (1)

Project	Grade	Amount of beds (sheets)	Employees Amount	Health care Amount	Outpatients (10,000 people)	Inpatients (10,000 people)	Medical Income (RMB 100 million)
Executive A	Grade III A	1000	2500	2000	170	8	28
Executive B	Grade III A	1000	1300	750	70	1.2	11
Executive E	Grade III A	1350	2260	1700	178	9.5	14
Executive J	Grade III A	600	300	226	36	1.5	5

Table 5.2 Background information of the interviewees' hospitals (2)

Project	Grade	Amount of beds (sheets)	Employees Amount	Health care Amount	Outpatients (10,000 people)	Inpatients (10,000 people)	Medical Income (RMB 100 million)
Executive C	Grade II A	1000	1200	970	100	2	7
Executive D	Grade II A	800	1500	1200	106	1.8	12
Executive F	Private	260	400	300	10	--	--
Executive G	Grade II A	220	270	245	8	0.7	0.8
Executive H	Grade III B	330	320	100	40	0.8	1
Executive I	Grade II A	967	967	732	50	3	2.2

With regard to the number of outpatients and emergency services, two hospitals' outpatient emergency department visits approaching 2 million, both are 1.7 million, two with 1 million visits, four with 500,000 visits and two with 100,000 visits.

From the perspective of hospitalization, there are three hospitals at the level of 100,000 inpatients, four at the level of 20,000 inpatients, two at the level of 10,000 inpatients, one is an oral clinic and there is no hospitalization.

From the perspective of revenue from medical service, the gap is even more obvious, the highest is nearly CNY 3 billion per year; the lowest is less than CNY 100 million.

5.1.1.2 Personal basic situation description

The basic background information of the interviewees is provided in Table 5.3.

In terms of education level, the first degree of the interviewees is medicine, five of them

are surgery major, four are internal medicine major, one is oral professional. However, the length of clinical practice is uneven. The second or highest education degree are hospital management or health management majors.

Table 5.3 Characteristics of the interviewees

Variable	Degree		Career Path				Professionalization		
Dimensions	First degree	Highest degree	Initial state	Intermediate state	Current status	Number of years as the executive	Key responsibilities	Department	Percentage of management time
Executive A	Bachelor of Medicine	Master of Hospital Management	Doctor	Management	Executive	3 years	Subject	Personnel	100%
Executive B	Bachelor of Medicine	Master of Hospital Management	Doctor	Management	Executive	10 years	Hospital development path and direction	Finance;	100%
Executive C	Bachelor of Medicine	Master of Hospital Management	Doctor	Management	Executive	10 years	Responsible for the strategic positioning of the hospital, decide	Responsible for internal control	100%
Executive D	Bachelor of Medicine	Master of Hospital Management	Doctor	Director, Clinical Department	Executive	15 years	Hospital planning comes first (government request)	Various major construction projects	90%
Executive E	Bachelor of Medicine	Master of Hospital Management	Doctor	Director, Clinical Department	Executive	3 years	Hospital strategic planning	Various major construction projects	90%
Executive F	Bachelor of Medicine	Master of Hospital Management	Doctor	Executive	Executive	5 years	Responsible for the overall work	Not in charge	100%

Executive G	Bachelor of Medicine	Master of Hospital Management	Doctor	Management	Executive	10 years	Strategic planning	Not in charge	80%
Executive H	Bachelor of Medicine	Master of Hospital Management	Doctor	Director, Clinical Department	Executive	3 years	Grasp the development direction and business strategy of the hospital	Not in charge	100%
Executive I	Bachelor of Medicine	Master of Management in Reading	Doctor	Director, Clinical Department	Executive	3 years	Full responsibility	Not in charge	90%
Executive J	Bachelor of Medicine	Ph.D. in Management is reading	Doctor	Management	Executive	14 years	Grasp strategy	Administration	50%

In terms of career paths, these 10 are all graduated from clinical medicine, but their career development paths are different. The general path is to graduate with a clinical major, to get a doctor credential (minimum two years, maximum 10 years), to give up clinical work, to get into management, to take on deputy level leadership at the hospital, and then full-time major leadership position at the hospital. Nine people have more or less experienced or participated in the management. The shortest clinical service time was only two years as a doctor. Executive A and Executive B were transferred to the administrative department after two years of clinical practice and completely gave up clinical work. Executive I was less involved, and only did the work for the mission committee. This post was part-time, and then he was promoted directly to the full-time post at the hospital management. Only Executive E was transferred directly from the department leadership to the deputy executive post at the hospital level, the regular position of the hospital career path. Both are common in China. In larger tertiary A-level hospitals (Grade III A), the path of "medical and excellent (people who perform better get promoted to upper management level)" is generally from the director of the department to the vice president of the hospital, and then transition to the hospital leader or party secretary.

In terms of length of service, these 10 people have held regular posts at the hospital level for varying lengths. The longest is the executive of G Hospital, who has been working for 15 years, is 59 years old, and will retire in 2020. The shortest are C and I, which only have three years of service.

In terms of professionalization, based on whether they hold academic positions or work at out-patient clinics, three people have abandoned clinical practice and are full-time executives. They all appeared in five hospitals in Shanghai. Three people only work at out-patient clinics once a week. We temporarily call it semi-professional. Four people continue to engage in clinical work, with a maximum 50% of time allocation.

In terms of job responsibilities and whether the executives have a clear understanding of their job responsibilities, all 10 executives believe that strategy is the first priority, all from a macro perspective, including positioning, selection, direction, and other commonly used words. Leadership terms have also been used, including information transmission, team building, supervision, mechanism design.

Some of the executives are assigned to the specific management department. Most of the executives oversee "comprehensive work" and focus on "key work". With regard to the division of labor, they are mainly engaged in the formulation of plans and control of the implementation, focusing on key tasks and personally supervising implementation. From the perspective of job responsibilities and the implementation of division of labor, the executives have a clear

positioning of themselves. They mainly consider themselves to be the "family members" of the hospital. The executives did not talk about their identity as government officials or related duties.

5.1.2 Interview results

Through interviews, the definition of the research topic, the dimensions of variables, and the relationship between dimensions have been further recognized, and information is provided for the design of the questionnaires.

5.1.2.1 About professionalism

The purpose of the interview design is to understand the executive's understanding and definition of professionalism. Professionalism has been described by the executive interviewees from two perspectives.

The first perspective recognizes that hospital executive professionalism is an emerging trend that is required in the current environment. For example,

"Executive is a profession … and professionalization is a trend" (Executive B).

"The management model of hospitals in foreign countries, especially in developed countries in the West …, is our direction, and professionalization is the trend" (Executive H).

The second perspective describes hospital executive management professionalism composed of systematic management knowledge and skills. For example:

"… have systematic management knowledge, devote themselves to management …, get paid only to do management" (Executive C).

"Professionalization may not refer solely to the executive individual, may not be a specific person …, is abstract and systematic" (Executive I).

5.1.2.2 About competence

The purpose of this question is to understand the competence dimension that executive's professional management needs to possess, as well as the path to improve. Overall, hospital executive management competence has been described by the executive interviewees from two perspectives.

The first perspective relates to the substantial content of management competence, for example:

"A professional needs to understand medicine, and understand management. It is a composite type of talent. An executive who does professional management, must be a "general doctor"" (Executive A).

"In addition to having a professional feel, the executive needs to master scientific management tools" (Executive I).

"Competence requires a lot to understand management, good interpersonal relations, strong coordination ability … IQ and emotional intelligence should be high" (Executive J).

"The Executive's mission refers to the direction, to have the ability to do strategic planning" (Executive D).

The second perspective relates to the need of training and the problems with current training concerning management competence, for example:

"Training is required. But at present, the training is too messy, the course is not good, the teacher is not professional" (Executive D).

"We have been organizing training, with some effect, and the atmosphere of management … but professionalism is still not possible" (Executive A).

"Management training is necessary. When I have problems, I take out the previous project management courseware and read again" (Executive C).

"I took a strategy course. I applied my understanding, used my hospital as an example, and came back to speak to the team members. It has a bit of an effect" (Executive B).

"One of my most impressive trainings was the teacher who took us to a project. The title of the project was proposed by me, and I looked for problems in the hospital's outpatient process to be the topic of the project. It has been used in our clinic already" (Executive H).

5.1.2.3 About role pressure

The purpose of the question design is to understand the role pressures of the executive in professional management and the factors that influence it. Overall, the executives interviewed share the same perceptions and understandings about the pressures that they are under due to the multiple roles and unclear expectations in their positions. For example：

"First, the executive plays the leading role …, is the first person responsible for the operation of the hospital with dozens of requirements from the government. The second is the role of a coach …, to give full play to the capacity of middle-level cadres. The third is the role of a leader …, there are difficulties and even dangerous times, rushing to the front line to play an exemplary role" (President G).

(1) Role Conflict

Different roles represent different positions and responsibilities. Each executive plays multiple and different roles, and the interviewees talk about the roles and causes for possible conflicts from two perspectives.

The first perspective concerns conflict between the roles as hospitals executives and as government officials working in a hospital. For example:

"Because the operation of public hospitals is self-funded, the state compensation is far from enough, but the state also has the requirements of public welfare, as well as many administrative provisions, such as to eliminate the drug markup in 2017, and then to cancel the increase in supplies, but the national price adjustment is not to compensate for the loss from the markup cancellation. As the hospital President, the policy must be strictly enforced. At the same time, we have to find a way to fill this hole. Some of these methods are impossible to implement naturally. The payment of health insurance is also delayed …, without cash flow the hospital cannot operate …, can only go to the drug company to pay, with some unconventional ways to bargain with the government" (Executive C).

"We are public hospitals and we have to carry out the Government's demands, otherwise I, the executive, will certainly not be able to hold on to the position. For example, assistance to remote areas gives a lot of pressure to the hospital's clinical departments ... The hard way is that we stipulate that we must have more than six months of assistance experience in order to get promoted to senior titles. The soft approach is to combine employee vacations and assistance and offer the hospital's vacation benefits at the places where assistance is needed, where people are poor generally, bur the scenery is very good. On the one hand, employees can take leaves. They can also do a few local consultations; the workload is not large. Hospitals, departments, doctors, and aided hospitals and other parties are very satisfied" (Executive A).

The second perspective about role conflict concerns the two different types of jobs they do simultaneously in the hospital: as a doctor and as an executive. These two job roles require very different competence with different expectations. For example:

"I was a bit reluctant to give up clinical work, but there are no other options. This job requires the executive to give up clinical practice. The executive has a lot of work, limited energy, and a lot of distress" (Executive E).

"Hospitals are in a period of change; no management is not good. There is always someone to come forward to do management. It is more challenging than to be a doctor" (Executive G).

"Being an executive has a higher degree of social recognition than a doctor, which is one of my motivations" (Executive C).

(2) Role ambiguity

In addition to pressures caused by role conflicts, hospital executives experience significant pressure caused by role ambiguity related to how they are evaluated and by what policies. The executive interviewees talk about their perceptions and experiences concerning role ambiguity

from two perspectives.

The first perspective concerns the unclarity and uncertainties in terms of criteria that are used to evaluate their performance. For example:

"The assessment indicator is vaguely oriented …, the indicator is not scientific enough, and there is no personalization of each quality indicator" (Executive C).

"The indicators are uniform and are not formulated according to the situation of different levels of hospitals. They require CMI assessment, but it conflicts with the positioning of secondary hospitals" (Executive G).

"The indicators are fuzzy. We have several superior departments in the district. Shenkang and universities can evaluate us, but the indicators are different" (Executive J).

The second perspective concerns the multiple types, sources and contradictions of the standards and policies that they are given in doing their executive jobs in the hospitals. For example:

"There are a lot of contradictions in policies …, graded diagnosis and treatment, and appointment registration policy. Relying on the hospital itself is not possible. Hospitals do not know how to operate" (Executive E).

"I have more than 400 documents on hand, and many government statistics are unrealistic and have to be reported manually" (Executive H).

"There are many policies …, but the regional macro-planning of health resources is almost non-existent, and the policy does not pay enough attention to the sustainable development of hospitals" (Executive I).

(3) Role overload

The executive interviewees share a common pressure caused by the overwhelming amount of work that they must do on a daily basis. The executive interviewees talk about their excessive workload from three perspectives.

The first perspective concerns the work that they must do on a daily basis in their jobs as hospital executives. For example:

"There are too many things to do. I cannot finish them all. As long as you have the workflow, it's okay, it's just that the cost of coordination is too high" (Executive J).

The second perspective concerns the ineffectiveness of their daily work and waste of time on unnecessary things they have to be involved in. For example:

"Too much time spent on all kinds of boring things, hosting social events and too many unnecessary meetings. I also have to go around several times for lunch. There is no time for vacation. The assignments must be completed at any cost" (Executive B).

The third perspective concerns the mental stress and tensions caused by work that is demanded of them from the government. For example:

"The mental pressure is still quite big. The executive is in charge …, and you'll have to be laid off if something goes wrong. I feel the tension every time I receive a work call during holidays. The government's task is rigid with no room for bargaining, but I have become accustomed to it" (Executive H).

5.1.2.4 About personal performance and organization performance

The purpose of this part of the interview is to understand how to evaluate individual and organization performance. The executive interviewees described the performance outcomes related to their professional management from three perspectives.

The first perspective concerns their individual satisfaction level with their jobs and the environment in which they do their work. For example:

"I am not too satisfied with the current work environment …, and my income is not high compared to the doctors of the same years' of experience" (Executive B).

"Being an executive helps achieve what you can't do by being a doctor yourself, and you can help doctors realize their dreams" (Executive G).

"Personal good or bad depends on the hospital operation's good or bad" (Executive A).

The second perspective concerns their perceptions about and experiences with how their individual performance outcome should be evaluated. For example:

"Personal performance evaluation is government satisfaction, employee satisfaction, and patient satisfaction" (Executive E).

"Personal evaluation can be done by virtue of the five aspects of integrity. The government uses this assessment for us" (Executive B).

The third perspective concerns their perceptions about and experiences with how their hospital performance outcome should be evaluated. For example:

"The most reasonable way to know whether the development of the hospital is good or not is to compare the current situation with the situation when I just got this position." (Executive J).

"Comparing with peers is also necessary, but you need to draw conclusions according to your own circumstances" (Executive H).

5.2 Quantitative survey analysis results

5.2.1 Data analysis methods

The data analysis tool for this study is SPSS 26. First, the sample hospital and the sample's basic characteristic information are descriptively analyzed using SPSS software. Second, the reliability and validity of the data are analyzed, and finally the correlation analysis and regression analysis are carried out to verify the hypotheses put forward in this study.

5.2.1.1 Sample background and features

The purpose of sample background and feature analysis is to analyze and describe the basic background information and features of the sample. Hence, we made a statistical description of the personal situation of the executive, including age, professional background, degree of investment management, and participation in training. Also, we learned the basic characteristics of the sample by using statistical indicators such as maximum, minimum, mean, standard deviation, and ratio.

5.2.1.2 Reliability analysis

The purpose of reliability analysis is to see if the sample data is true and reliable, i.e., to see if the respondent actually answered the individual questions. This study uses SPSS software to analyze the reliability of the Cronbach Alpha coefficient. When using this method, the alpha coefficient is best above 0.8, while 0.6 to 0.8 is acceptable, and below 0.6 requires modification of the gauge. In addition, the higher the number of questions corresponding to the variable and the larger the sample size, the greater the value will be.

5.2.1.3 Validity analysis

The purpose of validity analysis is to confirm whether the questionnaire can effectively measure the variables of the research model. When the confidence level is not up to standard, the validity cannot meet the standard. The validity analysis mainly includes content validity and structural validity. Content validity refers to the concept of whether the corresponding variable can be measured. Expert judgment and pilot test are usually used to determine the content validity. After the corresponding variable questions were confirmed and modified by four management and clinical experts, the tutor members, hospital managers, and students who issued questionnaires were invited to test the questionnaire. Structural validity refers to the correspondence between questions and measurement variables, including exploratory factor

analysis and validation factor analysis. In exploratory factor analysis, SPSS is used first to determine whether it is suitable for factor analysis using the Bartlett spherical test and KMO value, the pass values of the two indicators are 0.6 and P values less than 0.05, and then describe the factor number and variance interpretation rate, and finally the variance rotation. The correspondence between the question and the factor is judged by the factor loading coefficient, if the value is higher than 0.4, the effect is better.

5.2.1.4 Correlation analysis

The purpose of the analysis is to determine whether there is a relationship between variables and closeness between the variables. If the variable shows normal or approximately normal distribution, the Pearson correlation coefficient analysis is performed using SPSS, otherwise the Spearman correlation coefficient is used. The Pearson correlation coefficient is used in this study because normal distribution is an ideal state, and even if the variables present a non-approximate normal distribution, the Pearson correlation coefficient method is basically consistent with the results of the Spearman correlation coefficient method. A factor greater than 0.6 indicates a strong positive correlation, a factor greater than 0.4 indicates a strong correlation, and a factor of less than 0.4 indicates a lower correlation between the two variables.

5.2.1.5 Hypothesis testing using regression analysis

The purpose of regression analysis is to study the effect of the argument on the dependent variable. This study uses SPSS 26 software to perform a multi-linear regression analysis of the variables and dimensions of the framework, verifying the above hypotheses, including the relationship between the influencing factors on the professional management competence and role pressure, and these two variables on the outcome variables, as job satisfaction and organization performance.

5.2.2 Descriptive statistics

Table 5.4 Characteristics of the respondents' hospitals

Variable name	Description	Freq.	Percentage (%)
Hospital level	Grade III B	18	5.2
	Grade III A	96	28
	Grade II B	46	13.4
	Grade II A	96	28

	Other	73	21.3
	N/A	14	4.1
Hospital category	Teaching Hospital	174	50.7
	Non-teaching hospitals	154	44.9
	N/A	15	4.4
Hospital type	Specialist	76	22.2
	General	255	74.3
	N/A	12	3.5
Hospital nature	Public	262	76.4
	Private	69	20.1
	N/A	12	3.5
Hospital affiliate	Other (please note)	37	10.8
	University Hospital	126	36.7
	Independent Hospital	160	46.6
	N/A	20	5.8

As far as hospitals are concerned, the proportion of tertiary hospitals and secondary hospitals is 33.2% and 41.4% respectively, most of which are public hospitals, accounting for 76.4%. In terms of hospital type, general hospitals account for 74.3%. From the point of subsidiary and whether they are teaching hospitals, university hospitals account for 36.7%, teaching hospitals account for 50.7% (Table 5.4).

On a personal basis, the executive's official and deputy positions account for 53.1% of the administrative posts. Senior titles account for 64.8% and 72.6% of executives are medical-related. 55.1% of the first degree is undergraduate degree, 85.5% of medical-related majors (including clinical, medical, nursing, public health, etc.). 60.4% of the best academic qualifications are graduate and 39.2% of the highest degree are medical-related majors. The management (including management, legal, economic, etc.) majors account for 54.8%, which demonstrates that they have learned the management knowledge systematically. 65% of executives have a master's degree in hospital management (Table 5.5).

Table 5.5 Characteristics of the respondents

Variable name	Description	Freq.	Percentage (%)
Administrative positions	Party Committee Secretary	22	6.4
	Deputy Secretary of the Party Committee	9	2.6
	Other	89	25.9
	Vice-President	99	28.9
	Chief accountant	1	0.3
	Executive	83	24.2
	Assistant to the Executive	21	6.1
	N/A	19	5.5
Title	Intermediate	86	25.1
	Primary	16	4.7
	Vice Senior	147	42.9
	Senior	75	21.9
	N/A	19	5.5
Areas of expertise	Other	49	14.3
	Internal medicine	78	22.7
	Medical skills	17	5
	Surgical	62	18.1
	Nursing	25	7.3
	Management	94	27.4
	N/A	18	5.2
First degree	Technical secondary school	64	18.7
	College	71	20.7
	University (Bachelor)	189	55.1
	N/A	19	5.5
First degree major	Clinical Medicine	195	56.9
	Public health	11	3.2
	Other	24	7
	Medical skills	23	6.7

	Nursing	40	11.7
	Law	4	1.2
	Management	18	5.2
	Economic	10	2.9
	N/A	18	5.2
Highest degree	Ph.D.	24	7
	College	7	2
	University (Bachelor)	109	31.8
	Graduate	183	53.4
	N/A	20	5.8
Highest degree major	Clinical Medicine	91	26.5
	Public health	8	2.3
	Other	11	3.2
	Medical skills	7	2
	Nursing	18	5.2
	Law	4	1.2
	Management	177	51.6
	Economic	7	2
	N/A	20	5.8
Management professional education	Undergraduate	73	21.3
	Master of Hospital Management (MHA)	223	65
	Mast of Business Administration (MBA)	14	4.1
	The Executive Master of Business Administration (EMBA)	12	3.5
	Doctor of Business Administration (Ph.D., DBA)	8	2.3
	Other	13	3.8

Table 5.6 Personal work time allocation

Variable name	Freq.	Min.	Max.	Mean	Std. Dev.
Weekly hospital management hours	323	0	100	37.2	14.53
Working on medical work every week	321	0	80	12.2	14.55

From the perspective of time spent on clinical and management work, since the 80-hour work system is not limited to the problem, it is arranged according to the individual work time. It can be seen that the average time spent on management work is much higher than on medical work by more than three times (Table 5.6). Regarding training, the average number of short-term training sessions is eight times, including various conferences or special trainings, and the maximum reaches 73 times. Long-term training also averages nearly two times. The minimum value is 0, indicating that the executive has not participated in any management training. From the perspective of participation in management training, simulation training and multimedia teaching are the two forms with the highest penetration rates. There are also a relatively high proportion of lectures, case studies, and distance learning, and the participation in online learning is low (Table 5.7).

Table 5.7 Trainings participated

Variable name	Freq.	Min.	Max.	Mean	Std. Dev.
Number of trainings attended in the past three years					
Short-term training (within 1 month)	320	0	73	7.906	8.5591
Long-term training (more than 1 month)	320	0	30	1.212	2.6744
Forms of training attended					
Action (Simulation Training)	305	0.00%	100.00%	50.45%	23.93%
Lecture	305	0.00%	80.00%	16.82%	13.07%
Case (role-playing)	305	0.00%	60.00%	12.35%	11.33%
Distance learning	304	0.00%	60.00%	6.85%	8.26%
Multimedia Teaching Method	305	0.00%	100.00%	12.07%	13.29%
Online learning	151	0.00%	50.00%	3.17%	7.04%

From the perspective of management ability sources, the most comes from work experience, with an average of 55.40%, followed by management education, which reached 22.66%, while short-term training and special lectures have a small proportion of 14.66%. There are not many opportunities to study abroad, and the distribution is uneven, accounting for only 5.63%, which is understandable (Table 5.8).

Table 5.8 Sources of professional management competence

Variable name	Freq.	Min.	Max.	Mean	Std. Dev.
Work experience: %	315	0.00%	90.00%	55.40%	17.69%
Education (including MBA, postgraduate courses): %	310	0.00%	90.00%	22.66%	14.88%
Short-term/long-term job training or lectures: %	312	0.00%	80.00%	14.66%	10.93%
Training or study abroad: %	309	0.00%	100.00%	5.63%	9.01%
Other (please mark the source): %	168	0.00%	50.00%	4.57%	7.90%

5.2.3 Measurement reliability and validity

The stability reflects the reliability of the data measured in the scale, i.e., the consistency of the results after multiple measurements using the scale. The reliability analysis can be divided into four categories, namely, alpha coefficient, fold-half-confidence, replica-based reliability, and re-measured confidence. The alpha coefficient was used in the questionnaire's reliability analysis. For the alpha coefficient, i.e., the internal consistency coefficient, greater than 0.8 indicates that the confidence is quite high, 0.7 to 0.8 indicates a good confidence, and a modified gauge is considered if it is below 0.6. In the study, the usual alpha coefficient is greater than 0.7, indicating that the confidence is acceptable (Henseler, Ringle, & Sinkovics, 2009). Judging from the alpha coefficient calculation formula, if the sample size is large, i.e., more than 200, and more questions the variable sits, the alpha coefficient is usually higher. To determine the questions that affect the faith, one can calculate the corrected item total correlation (Item-Total Correlation, CITC) values, such as CITC below 0.4. If the alpha coefficient rises after deletion, consider deleting the corresponding questions.

Reliability analysis requires a separate analysis of each variable. Below we will use SPSS 26 software to analyze the confidence dimensions of seven variables, including professional management competence, role pressure, job satisfaction, organization performance, training, policy uncertainty, and leadership. The questions for each variable are already the result of exploratory factor analysis of pre-experimental data, and the variables or dimension alpha coefficients are summarized in Table 5.9, Table 5.10, Table 5.11, Table 5.12, Table 5.13, respectively.

Table 5.9 Reliability analysis results of professional management competence

Dimensions	Number	Measures	Total item correlation for correction (CITC)	The alpha coefficient of item deleted	Overall alpha coefficient
Planning ability	4a	I can develop long-term development plans based on the hospital's vision.	0.812	0.888	0.912
	4b	I am concerned about the impact of changes in the internal and external environment on the hospital strategy.	0.849	0.853	
	4c	I develop a specific annual work plan according to the hospital's strategic objectives	0.817	0.881	
Control ability	4f	I monitor schedule progress with performance goals as the priority	0.747	0.795	0.918
	4g	I use program management tools to monitor program progress regularly	0.69	0.754	
	4h	I can constantly adjust the hospital strategic plan according to the changes in the environment inside and outside the hospital.	0.688	0.805	
Problem solving ability	4i	At work I can distinguish the main, grasp the key issues	0.803	0.9	0.918
	4j	I can analyze the main contradictions and the main aspects of things.	0.78	0.902	
	4k	I can analyze and choose the appropriate solution to the problem according to the specific situation of the problem	0.795	0.902	
	4l	I can choose the right time to solve the problem according to the specific situation of the problem.	0.776	0.903	

Table 5.10 Reliability analysis results of role pressure

Dimensions	Number	Measures	Total item correlation for correction (CITC)	The alpha coefficient of item deleted	Overall alpha coefficient
Role conflict	2a	Different superiors put forward different mission goals for the hospital that are difficult to complete at the same time, which put me in dilemma	0.634	0.694	0.775
	2b	Relevant policies of higher authorities are contradictory in time, which cause me difficulties	0.595	0.713	
	2c	Superior's policies are inconsistent with objectives	0.589	0.716	
	2e	There is a contradiction between the hospital's own development and the performance goals of superiors	0.503	0.761	
Role ambiguity	2t	I think the parent department's definition of my job responsibilities is very vague.	0.612	0.599	0.741
	2u	I feel like my role as executive is vague.	0.6	0.619	
	2v	I'm not sure how my supervisor evaluates my performance.	0.491	0.744	
Role overload	2x	I often have to continue work during off hours	0.601	0.728	0.785
	2z	A lot of work has nothing to do with hospital development, but I have to attend in person.	0.462	0.793	
	2aa	I can't guarantee to eat on time because of work.	0.687	0.68	
	2bb	I can't take time off because of my work.	0.625	0.715	

Role gap	2dd	I lack the management knowledge and skills to do my job effectively	0.678	0.859	0.874
	2ee	My superiors expect more than I can.	0.759	0.828	
	2ff	The expectations of the employees exceed my abilities	0.766	0.824	
	2gg	Expectations from employees exceed my ability	0.718	0.843	

Table 5.11 Reliability analysis results of job satisfaction

Dimensions	Number	Measures	Total item correlation for correction (CITC)	The alpha coefficient of item deleted	Overall alpha coefficient
Career satisfaction	5a	I'm happy with the nature of my current job.	0.473	0.86	0.635
	5b	I'm happy with my current salary.	0.473	0.895	
	5c	I'm happy with my future medical development goals.	0.666	0.771	
Personal growth	5d	I'm happy with my opportunity to improve my professional management skills.	0.642	0.793	0.824
	5e	I'm happy with my opportunity to improve my medical professional.	0.733	0.7	
Organization performance	5k	Hospital business revenue went up a lot compared to when I took office	0.78	0.923	0.931
	5l	Hospital patient traffic has increased a lot compared to when I took office.	0.828	0.914	
	5m	Hospital staff are more satisfied with hospitals than when I took office	0.832	0.913	
	5n	Patients are more satisfied with hospital services than when I took office	0.844	0.911	
	5o	The higher authorities are more satisfied with the	0.808	0.917	

		development situation than when I took office.			

Table 5.12 Reliability analysis results of influencing factors

Dimensions	Number	Measures	Total item correlation for correction (CITC)	The alpha coefficient of item deleted	Overall alpha coefficient
Training	3a	Too much theoretical content of training, few practical tools are introduced	0.742	0.855	0.884
	3b	Content is too broad; the position is not targeted	0.835	0.832	
	3c	There are fewer cases from the medical service industry, and the reference significance is not strong	0.715	0.861	
	3d	Training content is not systematic	0.683	0.869	
	3e	Tools will not be applied without follow-up training coaching	0.643	0.878	
Policy uncertainty	2i	I'm not very clear about the policy implications of the executive's responsibility under the leadership of the Party Committee	0.612	0.807	0.785
	2j	I'm not very clear about the impact of the cancellation of the drug and consumables markups on the operation of the hospital	0.666	0.791	
	2k	I'm not very clear about the path of the Modern Hospital Management System.	0.616	0.805	
	2l	I'm not very clear about the impact of graded care on hospital operations.	0.71	0.78	

	2m	I'm not very sure how to deal with commercial bribery in hospitals.	0.573	0.816	
Leadership vision	6e	I'm going to paint a picture of the future of the hospital.	0.808	0.917	0.93
	6f	I can make employees understand the values and mission of the hospital.	0.887	0.891	
	6g	I can keep employees informed about the hospital's development goals.	0.864	0.9	
	6h	I'll explain to employees what they're doing.	0.789	0.924	
Leadership care	6i	I patiently teach the staff, and answer questions for the staff	0.747	0.897	0.911
	6j	I will consider the personal difficulties and requirements of the employee when I arrange my work	0.762	0.894	
	6k	I can always listen to employees' suggestions and opinions	0.81	0.884	
	6l	I care about the work, life and growth of my employees and sincerely advise them on their development.	0.815	0.883	
	6m	I focus on creating opportunities and conditions where employees can develop their strengths	0.741	0.898	

As can be seen from the above reliability analysis results, in the four dimensions of role pressure, the overall alpha coefficient is 0.775, 0.741, 0.785, 0.874; in the two dimensions for job satisfaction and one for organization performance, alpha coefficients are of 0.635, 0.824, and 0.931, respectively. The above results indicate a very high degree of confidence, that all questions are more than 0.4, and removing any one of the questions cannot improve the overall alpha coefficient. Therefore, the above seven variables, including all dimensions, and 50

questions are not modified or deleted.

This study uses SPSS 26 statistical software to verify the structural validity of the questionnaire, and before carrying out the exploratory factor analysis, the KMO (Kaiser-Meyer-Olkin) statistics and Bartlett spherical test are used to determine whether the data is suitable for factor analysis. If the KMO value is greater than the general standard 0.6, and the P value of the Bartlett spherical test is 0.000, less than 0.01 test standard, indicating that it is suitable for factor analysis. Through the analysis of the structural validity of the seven variables, the results are as follows.

Table 5.13 Construct validity analysis results of professional management competence

Number	Measures	Component		
		1	2	3
4a	I can develop long-term development plans based on the hospital's vision.			-1.016
4b	I am concerned about the impact of changes in the internal and external environment on the hospital strategy.			-0.833
4c	I develop a specific annual work plan according to the hospital's strategic objectives			-0.703
4f	I monitor schedule progress with performance goals as the priority		0.721	
4g	I use program management tools to monitor program progress regularly		0.924	
4h	I can constantly adjust the hospital strategic plan according to the changes in the environment inside and outside the hospital.		0.858	
4i	At work I can distinguish the main, grasp the key issues	0.769		
4j	I can analyze the main contradictions and the main aspects of things.	0.945		
4k	I can analyze and choose the appropriate solution to the problem according to the specific situation of the problem	0.924		
4l	I can choose the right time to solve the problem according to the specific situation of the problem.	0.836		
Feature root value after rotation		6.63	0.856	0.726
Rotating rear differential interpretation rate		66.303	8.563	7.261
Cumulative variance interpretation rate		66.303	74.866	82.127
KMO value		0.917		
Bartlett spherical test		2851.963		
Sig		0		

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 7 a.

Table 5.14 Construct validity analysis results of role pressure

Number	Measures	Component			
		1	2	3	4
2a	Different superiors put forward different mission goals for the hospital that are difficult to complete at the same time, which put me in dilemma			0.828	
2b	Relevant policies of higher authorities are contradictory in time, which cause me difficulties			0.795	
2c	Superior's policies are inconsistent with objectives			0.755	
2e	There is a contradiction between the hospital's own development and the performance goals of superiors			0.634	
2t	I think the parent department's definition of my job responsibilities is very vague.				-0.66
2u	I feel like my role as executive is vague.				-0.761
2v	I'm not sure how my supervisor evaluates my performance.				-0.64
2x	I often have to continue work during off hours		0.756		
2z	A lot of work has nothing to do with hospital development, but I have to attend in person.		0.458		
2aa	I can't guarantee to eat on time because of work.		0.878		
2bb	I can't take time off because of my work.		0.849		
2dd	I lack the management knowledge and skills to do my job effectively	0.725			
2ee	My superiors expect more than I can.	0.818			
2ff	The expectations of the employees exceed my abilities	0.866			
2gg	Expectations from employees exceed my ability	0.895			
Feature root value after rotation		4.92	2.065	1.814	1.141
Rotating rear differential interpretation rate		32.797	13.769	12.093	7.606
Cumulative variance interpretation rate		32.797	46.566	58.659	66.265
KMO value		0.828			

Bartlett spherical test	2026.491
Sig	0

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 8 a.

In Table 5.13, the KMO value is 0.917, which passed the Bartlett sphericity test. By setting and extracting one factor, and according to the content correlation and loading factor comparison of the question items, the question items are successively eliminated. So that the loading factor of all remaining question items is greater than 0.6, the minimum is 0.703, and the factor interpretation rate of cumulative variance is 82.127%. Considering that the executive's competence mainly includes planning ability, control ability and problem-solving ability, the corresponding relationship between the description of the question and the factor is in line with the professional situation, and the variable has good structural validity.

In Table 5.14, the KMO value is 0.828, which passed the Bartlett sphericity test. By setting and extracting one factor, and according to the content correlation and loading factor comparison of the question items, the question items are successively eliminated. So that the loading factor of all remaining question items is greater than 0.4, the minimum is 0.458, and the factor interpretation rate of cumulative variance is 66.265%. Considering that role pressure has four dimensions: role conflict, role ambiguity, role overload and role gap, it is in line with professional conditions that the corresponding relationship between the question item and the factor is in line with the professional situation, and the variable has good structural validity.

Table 5.15 Construct validity analysis results of job satisfaction and organization performance

Number	Measures	Component		
		1	2	3
5a	I'm happy with the nature of my current job.			0.694
5b	I'm happy with my current salary.			0.948
5f	I'm happy with my future medical development goals.		0.829	
5g	I'm happy with my opportunity to improve my professional management skills.		0.828	
5h	I'm happy with my opportunity to improve my medical professional.		0.916	
5k	Hospital business revenue went up a lot compared to when I took office	0.881		

5l	Hospital patient traffic has increased a lot compared to when I took office.	0.9		
5m	Hospital staff are more satisfied with hospitals than when I took office	0.896		
5n	Patients are more satisfied with hospital services than when I took office	0.874		
5o	The higher authorities are more satisfied with the development situation than when I took office.	0.871		
Feature root value after rotation		4.796	1.903	1.024
Rotating rear differential interpretation rate		47.958	19.032	10.242
Cumulative variance interpretation rate		47.958	66.99	77.232
KMO value		0.839		
Bartlett spherical test		2119.58		
Sig		0		

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 5 a.

Table 5.16 Construct validity analysis results of training and policy uncertainty

Number	Measures	Component 1	2
2i	I'm not very clear about the policy implications of the executive's responsibility under the leadership of the Party Committee		0.75
2j	I'm not very clear about the impact of the cancellation of the drug and consumables markups on the operation of the hospital		0.817
2k	I'm not very clear about the path of the Modern Hospital Management System.		0.744
2l	I'm not very clear about the impact of graded care on hospital operations.		0.839
2m	I'm not very sure how to deal with commercial bribery in hospitals.		0.721
3a	Too much theoretical content of training, less introduction of practical tools	0.847	
3b	Content is too broad; the position is not targeted	0.913	
3c	There are fewer cases in the medical service industry, and the reference	0.832	

	significance is not strong		
3d	Training content is not systematic	0.801	
3e	Tools will not be applied without follow-up training coaching	0.757	
Feature root value after rotation		3.739	2.751
Rotating rear differential interpretation rate		37.388	27.509
Cumulative variance interpretation rate		37.388	64.897
KMO value		0.847	
Bartlett spherical test		1549.703	
Sig		0	
Extraction Method: Principal Component Analysis.			
Rotation Method: Oblimin with Kaiser Normalization.			
a. Rotation converged in 3 a.			

In Table 5.15, the KMO value is 0.839, which passed the Bartlett sphericity test. By setting and extracting one factor, and according to the content correlation and loading factor comparison of the question items, the question items are successively eliminated. So that the loading factor of all remaining question items is greater than 0.6, the minimum is 0.694, and the factor interpretation rate of cumulative variance is 77.232%. Considering that job satisfaction and organization performance are two variables, the description of the corresponding relationship between the question and the factor is in line with the professional situation, and the variable has good structural validity.

In Table 5.16, the KMO value is 0.847, which passed the Bartlett sphericity test. By setting and extracting one factor, and according to the content correlation and loading factor comparison of the question items, the question items are successively eliminated. So that the loading factor of all remaining question items is greater than 0.6, the minimum is 0.75, and the factor interpretation rate of cumulative variance is 64.897%. Considering that policy uncertainty and training are two variables, the policy uncertainty mainly finds out the executive's understanding of the policy, the training mainly finds out the executive's satisfaction with the management training, so the description of the corresponding relationship between the topic and factors is in line with the professional situation, the variable has a good structural validity.

Table 5.17 Construct validity analysis results of leadership

Number	Measures	Component 1	2
6f	I can make employees understand the values and mission of the hospital.		-0.923
6g	I can keep employees informed about the hospital's development goals.		-0.917
6h	I'll explain to employees what they're doing.		-0.634
6i	I patiently teach the staff, and answer questions for the staff	0.777	
6j	I will consider the personal difficulties and requirements of the employee when I arrange my work	0.977	
6k	I can always listen to employees' suggestions and opinions	0.801	
6l	I care about the work, life and growth of my employees and sincerely advise them on their development.	0.786	
Feature root value after rotation		5.018	4.538
Rotating rear differential interpretation rate		59.776	8.497
Cumulative variance interpretation rate		59.776	68.273
KMO value		0.9	
Bartlett spherical test		2493.249	
Sig		0	
Extraction Method: Principal Component Analysis.			
Rotation Method: Oblimin with Kaiser Normalization.			
a. Rotation converged in 6 a.			

In Table 5.17, the KMO value is 0.9, which passed the Bartlett sphericity test. By setting and extracting one factor, and according to the content correlation and loading factor comparison of the question items, the question items are successively eliminated. So that the loading factor of all remaining question items is greater than 0.6, the minimum is 0.634, and the factor interpretation rate of cumulative variance is 68.273%. Considering that the main functions of leadership is leading the stuff to go further and give them care, the correspondence between the description of the question and the factor is in line with the professional situation, the variable has good structural validity.

5.2.4 Correlation analysis

Correlation analysis is to study whether there is a correlation between two variables, using correlation coefficients to indicate the closeness of the relationship between the two variables. This study used Pearson correlation coefficients for correlation analysis, correlation coefficients between 0.8 to 1.0 indicate extremely strong correlation, 0.6 to 0.8 for strong correlation, 0.4 to 0.6 for moderate correlation, 0.2 to 0.4 for weak correlation, less than 0.2 for very weak correlation or no correlation.

This study analyzed correlations of seven variables, as shown in Table 5.18. At the variable level, training has weak correlation with professional management competence (correlation factor is 0.112) and has moderate correlation with role pressure (correlation factor is 0.422). Policy uncertainty has weak correlation with professional management competence (correlation factor is -0.266) and has moderate correlation with role pressure (correlation factor is 0.448). Leadership has strong correlation with professional management competence (correlation factor is 0.759) and has no correlation with role pressure. Professional management competence has weak correlation with job satisfaction (correlation factor is 0.357) and has strong correlation with organization performance (correlation factor is 0.629). Role pressure has weak correlation with job satisfaction (correlation factor is 0.253) and has no correlation with organization performance.

Based on the correlation results between the above variables, the hypotheses H1c, H2a, H2b, H3a and H3b were initially validated. Although the correlation analysis shows the validity of the study hypothesis, showing that there is a significant correlation between the variables, the regression analysis needs to further verify whether there is a causal relationship.

Table 5.18 Correlation analysis results on variables

Dimension	Training	Policy Uncertainty	Leadership	Role Pressure	Professional Management Competence	Job Satisfaction	Organization Performance
Training	1						
Policy Uncertainty	.155**	1					
Leadership	.154**	-.184**	1				
Role Pressure	.422**	.448**	-0.019	1			

Professional Management Competence	.112*	-.266**	.759**	-0.064	1		
Job Satisfaction	-0.087	-0.05	.288**	-.253**	.357**	1	
Organization Performance	.205**	-.171**	.523**	-0.033	.629**	.348**	1

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

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

This study analyzed correlations of fourteen dimensions of seven variables, as shown in Table 5.19. At the dimensional level, the leadership vision has the strongest correlation with the planning ability (correlation factor is 0.699). Three competence dimensions of professional management competence, planning ability, control ability, problem-solving ability has strong correlation with leadership vision and leadership care ($p<0.01$), have weak correlations with policy uncertainty ($p<0.01$), but has no correlation with training. The three dimensions are weakly correlated with career satisfaction and personal growth ($p<0.01$), but have strong correlation with organization performance ($p<0.01$). The four dimensions of role pressure have weak correlation with training ($p<0.01$), and have weak correlation with policy uncertainty ($p<0.01$) except for role overload. Only role gap has weak correlation with leadership vision and leadership care ($p<0.01$), other dimensions of role pressure have weakly or no correlation with leadership. The four dimensions have weak correlation with career satisfaction ($p<0.01$), and have weak or no correlation with personal growth. Only role overload and role gap are weakly related to organization performance ($p<0.01$), and role conflict and role ambiguity have no correlation with organization performance.

Table 5.19 Correlation analysis results on dimensions

Dimensions	Training	Policy Uncertainty	Leadership Vision	Leadership Care	Role Conflict	Role Ambiguity	Role Overload	Role Gap	Planning Ability	Control Ability	Problem Solving Ability	Career Sat	Personal Growth	Organization Performance
Training	1													
Policy Uncertainty	.155**	1												
Leadership Vision	.165**	-.180**	1											
Leadership Care	.118*	-.158**	.716**	1										
Role Conflict	.278**	.249**	0.093	.111*	1									
Role Ambiguity	.357**	.513**	-0.102	-0.044	.382**	1								
Role Overload	.350**	0.084	.138*	0.07	.293**	.308**	1							
Role Gap	.214**	.434**	-.207**	-.149**	.286**	.530**	.271**	1						
Planning Ability	.139*	-.261**	.699**	.591**	0.053	-0.082	.155**	-.190**	1					
Control Ability	0.079	-.201**	.574**	.588**	0.06	-0.062	0.068	-.190**	.704**	1				
Problem Solving Ability	0.091	-.249**	.663**	.688**	0.048	-.133*	0.063	-.257**	.730**	.698**	1			
Career Sat	-0.059	-0.019	.195**	.150**	-.174**	-.214**	-.116*	-.212**	.199**	.213**	.205**	1		
Personal Growth	-0.089	-0.068	.262**	.293**	-0.089	-.148**	-0.046	-.219**	.302**	.377**	.335**	.415**	1	
Organization Performance	.205**	-.171**	.510**	.457**	0.075	-0.075	.174**	-.265**	.613**	.519**	.568**	.214**	.373**	1

5.2.5 Regression analysis and hypothesis testing

In order to study the dependency between the variables, linear regression analysis can be used. This study will use multiple linear regression analysis methods to verify the influence of independent variables on the dependent variables. There are two steps. The step one is for verifying the hypotheses on the variable level. The step two is for exploring more relationships between the variables on the dimension level. We verify the significance of the independent variable to prove whether the independent variable has an effect on the dependent variable, and then judge the positive and negative regression coefficients. If it is a positive value, it indicates a positive impact relationship. If it is a negative value, it indicates a negative impact relationship.

We will analyze the relationship between framework variables from two levels. The first is based on the framework 1, the effect of influencing factors on the professional management competence and role pressure. The second is based on the framework 2, the effect of the professional management competence and role pressure on the outcome.

Results are summarized from Table d.1 to Table d.4 in Annex D. Summary of hypotheses are shown in Table 5.20.

First, we explore framework 1 and below is the analysis of the effect of influencing factors on the professional management competence.

The following is regression equation 1 including the corresponding independent variables:

Equation 1：$Y_1=\beta_{10}+ \beta_{11}X_{11}+ \beta_{12}X_{12}+ \beta_{13}X_{13}$

Where: Y_1- Professional Management Competence;

X_{11}- Training;

X_{12} - Policy Uncertainty;

X_{13} - Leadership

Table d.1 in Annex D shows that in the regression model of the influence relationship on professional management competence, R2 is 0.593, indicating that the independent variable can explain the reason for the change of 59.3%. The F test has a P value of 0.000, so it is determined that at least one of the independent variables has an effect on the professional management competence. Policy uncertainty and leadership show significant effects at a p-value of 0.05 confidence level. The regression coefficients are -0.092 and 0.725, indicating that policy uncertainty is negative effect and leadership is positive effect. Training shows no significant effect.

Therefore, this analysis assumes that H1b and H1c are supported. And H1a is not supported.

The following is regression equation 2 including the corresponding independent variables:

Equation 2：$Y_2=\beta_{20}+\beta_{21}X_{21}+\beta_{22}X_{22}+\beta_{23}X_{23}$

Where: Y_2- Role Pressure;

X_{21}- Training;

X_{22} - Policy Uncertainty;

X_{23} – Leadership;

Table d.2 in Annex D shows that in the regression model of the influence relationship on role pressure, R2 is 0.327, indicating that the independent variable can explain the reason for the change of 32.7%. The F test has a P value of 0.000, so it is determined that at least one of the independent variables has an effect on the role pressure. Training and policy uncertainty show significant effects at a p-value of 0.05 confidence level. The regression coefficients are 0.276 and 0.289, indicating that training and policy uncertainty are positive effect. Leadership shows no significant effect.

Therefore, this analysis assumes that H2a and H2b are supported. And H2c is not supported.

The following is regression equation 3 including the corresponding independent variables:

Equation 3：$Y_3=\beta_{30}+\beta_{31}X_{31}+\beta_{32}X_{32}$

Where: Y_3- Job Satisfaction;

X_{31}- Professional Management Competence;

X_{32} - Role Pressure;

Table d.3 shows that in the regression model of the outcome of professional management competence and role pressure on job satisfaction, R2 is 0.181, indicating that the independent variable can explain the reason for the change of 18.1%. The F test has a P value of 0.000, so it is determined that at least one of the independent variables has an effect on the job satisfaction. Professional management competence and role pressure show significant effects at a p-value of 0.05 confidence level. The regression coefficients are 0.389 and -0.242, indicating that professional management competence is positive effect and role pressure is negative effect.

Therefore, this analysis assumes that H3a and H4a are supported.

The following is regression equation 4 including the corresponding independent variables:

Equation 4：$Y_4=\beta_{40}+\beta_{41}X_{41}+\beta_{42}X_{42}$

Where: Y_4- Organization Performance;

X_{41}- Professional Management Competence;

X_{42} - Role Pressure;

Table d.4 in Annex D shows that in the regression model of the outcome of professional management competence and role pressure on organization performance, R2 is 0.395,

indicating that the independent variable can explain the reason for the change of 39.5%. The F test has a P value of 0.000, so it is determined that at least one of the independent variables has an effect on the job satisfaction. Professional management competence shows significant effects at a p-value of 0.05 confidence level. The regression coefficient is 0.742, indicating that professional management competence is positive effect. Role pressure shows no significant effect.

Therefore, this analysis assumes that H3b is supported. H4b is not supported.

In summary, the validation results of the hypotheses presented in this study are shown in Table 5.20:

Table 5.20 Summary of hypotheses testing results

No.	Hypotheses	Testing results
H1a	Training affects the executive's professional management competence	Not Supported
H1b	Policy uncertainty affects the executive's professional management competence	Supported
H1c	Leadership affects executive's professional management competence	Supported
H2a	Training affects executive's professional management role pressure	Supported
H2b	Policy uncertainty affects the executive's professional management role pressure	Supported
H2c	Leadership affects executive's professional management role pressure	Not supported
H3a	Executive’s professional management competence affects job satisfaction	Supported
H3b	Executive’s professional management competence affects organization performance	Supported
H4a	Executive’s professional management role pressure affects job satisfaction	Supported
H4b	Executive’s professional management role pressure affects organization performance	Not supported

The following is to analyze the relationship between framework variables on the dimension level. The first is based on the framework 1, the effect of influencing factors on the professional management competence and role pressure. The second is based on the framework 2, the effect of the professional management competence and role pressure on the outcome.

Results are summarized from Table d.5 to Table d.14 in Annex D. Summary of results are shown in Table 5.21.

First, we explore framework 1 and below is the analysis of the effect of influencing factors on the professional management competence, organized by its three dimensions: planning ability, control ability and problem solving ability.

The following is regression equation 5 including the corresponding independent variables:

Equation 5：$Y_5=\beta_{50}+\beta_{51}X_{51}+\beta_{52}X_{52}+\beta_{53}X_{53}+\beta_{54}X_{54}$

Where: Y_5- Planning Ability;

X_{51}- Training;

X_{52} - Policy Uncertainty;

X_{53} - Leadership Vision;

X_{54}- Leadership Care;

Table d.5 shows that in the regression model of the influence relationship on planning ability, R2 is 0.525, indicating that the independent variable can explain the reason for the change of 52.5%. The F test has a P value of 0.000, so it is determined that at least one of the independent variables has an effect on the planning ability. Leadership vision, leadership care, and policy uncertainty show significant effects at a p-value of 0.05 confidence level. The regression coefficients are 0.538, 0.186, and -0.109, indicating that the three factors will affect planning ability. The first two factors are positive, and policy uncertainty is negative effect. Training shows no significant effect.

The following is regression equation 6 including the corresponding independent variables:

Equation 6：$Y_6=\beta_{60}+\beta_{61}X_{61}+\beta_{62}X_{62}+\beta_{63}X_{63}+\beta_{64}X_{64}$

Where: Y_6- Control Ability;

X_{61}- Training;

X_{62} - Policy Uncertainty;

X_{63} - Leadership Vision;

X_{64}- Leadership Care;

Table d.6 in Annex D shows that in the regression model of the influence relationship on control ability, R2 is 0.401, indicating that the independent variable can explain the reason for the change of 40.1%. The P value of the F test is 0.000, so it is determined that at least one of the independent variables has an effect on the planning ability. Leadership vision, leadership care, and policy uncertainty show significant effects at p-values of 0.05 confidence levels. Regression coefficients of 0.323, 0.402, and -0.074 indicate that the three factors will affect the control ability. The first two are positive effects, and policy uncertainty is negative effect. Training shows no significant effect.

The following is regression equation 7 including the corresponding independent variables:

Equation 7：$Y_7=\beta_{70}+\beta_{71}X_{71}+\beta_{72}X_{72}+\beta_{73}X_{73}+\beta_{74}X_{74}$

Where: Y_7- Problem Solving Ability;

X_{71}- Training;

X_{72} - Policy Uncertainty;

X_{73} - Leadership Vision;

X_{74} - Leadership Care;

Table d.7 in Annex D shows that in the regression model of the impact relationship on problem solving ability, R2 is 0.547, indicating that the independent variable can explain the reason for 54.7% of the change. The F test has a P value of 0.000, so it is determined that at least one of the independent variables has an effect on the ability of problem solving. Leadership vision, leadership care, and policy uncertainty show significant effects at p-values of 0.05 confidence levels. The regression coefficients are 0.308, 0.418, and -0.085, indicating that the three factors will affect the problem solving ability. The first two are positive effects, and the policy uncertainty is negative. Training shows no significant effect.

Below, we present the effect of influencing factors on the professional management role pressure organized by the four dimensions: role conflict, role ambiguity, role overload and role gap.

The following is regression equation 8 including the corresponding independent variables:

Equation 8：$Y_8=\beta_{80}+ \beta_{81}X_{81}+ \beta_{82}X_{82}+ \beta_{83}X_{83}+ \beta_{84}X_{84}$

Where: Y_8- Role Conflict;

X_{81}- Training;

X_{82} - Policy Uncertainty;

X_{83} - Leadership Vision;

X_{84} - Leadership Care;

Table d.8 in Annex D shows that in the regression model of the impact of influencing factors on role conflict, R2 is 0.135, indicating that the independent variable can explain the cause of the change of 13.5%. The P value of the F test is 0.000, so it is determined that at least one of the independent variables has an impact on the role conflict. Training and policy uncertainty showed significant effects at a p-value of 0.05 confidence level, and the regression coefficients were 0.227 and 0.229, indicating that both factors will cause role conflict and have a positive effect. Leadership vision and leadership care show no significant effect.

The following is regression equation 9 including the corresponding independent variables:

Equation 9：$Y_9=\beta_{90}+ \beta_{91}X_{91}+ \beta_{92}X_{92}+ \beta_{93}X_{93}+ \beta_{94}X_{94}$

Where: Y_9- Role Ambiguity;

X_{91}- Training;

X_{92} - Policy Uncertainty;

X_{93} - Leadership Vision;

X_{94} - Leadership Care;

Table d.9 in Annex D shows that in the regression model of the impact of influencing factors on the role ambiguity, R2 is 0.35, indicating that the independent variable can explain the reason for the change of 35%. The P value of the F-test is 0.000, so it is determined that at least one of the independent variables has an effect on the role ambiguity. Training, policy uncertainty and leadership vision showed significant effects at a p-value of 0.05 confidence level, and the regression coefficients were 0.322, 0.476 and -0.179, indicating that all three factors will cause role ambiguity but while the first two have a positive effect, leadership vision has a negative effect. The leadership care shows no significant effect.

The following is regression equation 10 including the corresponding independent variables:

Equation 10：$Y_{10}=\beta_{100}+\beta_{101}X_{101}+\beta_{102}X_{102}+\beta_{103}X_{103}+\beta_{104}X_{104}$

Where: Y_{10}- Role Overload;

X_{101}- Training;

X_{102} - Policy Uncertainty;

X_{103} - Leadership Vision;

X_{104} - Leadership Care;

Table d.10 in Annex D shows that in the regression model of the effect of influencing factors on role overload, R2 is 0.133, which indicates that the independent variable can explain the cause of the change of 13.3%. The P value of the F test is 0.000, so it is determined that at least one of the independent variables has an effect on role overload. Training showed a significant impact at a p-value of 0.05 confidence level, with a regression coefficient of 0.364, indicating that training will cause role overload, and has positive effects. Policy uncertainty, leadership vision and leadership care show no significant effect.

The following is regression equation 11 including the corresponding independent variables:

Equation 11：$Y_{11}=\beta_{110}+\beta_{111}X_{111}+\beta_{112}X_{112}+\beta_{113}X_{113}+\beta_{114}X_{114}$

Where: Y_{11}- Role Gap;

X_{111}- Training;

X_{112} - Policy Uncertainty;

X_{113} - Leadership Vision;

X_{114} - Leadership Care;

Table d.11 in Annex D shows that in the regression model of the impact of influencing

factors on role gap, R2 is 0.237, which indicates that the independent variable can explain the cause of the change of 23.7%. The P value of the F test is 0.000, so it is determined that at least one of the independent variables has an impact on the role gap. Training, policy uncertainty and leadership vision show significant effects at a p-value of 0.05 confidence level. The regression coefficients are 0.2, 0.394 and -0.257, indicating that the factors will influence the role gap, but while the first two factors have a positive effect, the leadership vision has a negative effect. The leadership care shows no significant effect.

The next regressions explore framework 2, the outcomes of professional management competence and role pressure. As noted before, the variable job satisfaction is composed of career satisfaction and personal growth, while organizational performance has a single dimension.

The following is regression equation 12 including the corresponding independent variables:

Equation 12： $Y_{12}=\beta_{120}+ \beta_{121}X_{121}+ \beta_{122}X_{122}+ \beta_{123}X_{123}+ \beta_{124}X_{124}+ \beta_{125}X_{125}+ \beta_{126}X_{126}+ \beta_{127}X_{127}$

Where: Y_{12}- Career Satisfaction;

X_{121}- Planning Ability;

X_{122} - Control Ability;

X_{123} - Problem Solving Ability;

X_{124}- Role Conflict;

X_{125}- Role Ambiguity;

X_{126}- Role Overload;

X_{127} - Role Gap;

Table d. 12 in Annex D shows that in the regression model of the impact of professional management competence and role pressure on career satisfaction, R2 is 0.114, indicating that the independent variable can explain the reason for the change of 11.4%. The P value of the F test is 0.000, so it is determined that at least one of the independent variables has an effect on career satisfaction. Role conflict has a significant effect at the p-value of 0.05 confidence levels with a regression coefficient of -0.11, indicating that role conflict will affect career satisfaction. Role conflict has negative effect. Role ambiguity, role overload and role gap show no significant effect. The professional management competence shows no significant effect on career satisfaction.

The following is regression equation 13 including the corresponding independent variables:

Equation 13： $Y_{13}=\beta_{130}+ \beta_{131}X_{131}+ \beta_{132}X_{132}+ \beta_{133}X_{133}+ \beta_{134}X_{134}+ \beta_{135}X_{135}+ \beta_{136}X_{136}+$

$\beta_{137}X_{137}$

Where: Y_{13}- Personal Growth;

X_{131}- Planning Ability;

X_{132} - Control Ability;

X_{133} - Problem Solving Ability;

X_{134}- Role Conflict;

X_{135}- Role Ambiguity;

X_{136}- Role Overload;

X_{137}- Role Gap;

Table d.13 in Annex D shows that in the regression model of the impact of professional management competence and role pressure on personal growth, R2 is 0.177, indicating that the independent variable can explain the reason for the change of 17.7%. The F-test has a P value of 0.000, so at least one of the independent variables is determined to have an effect on personal growth. Control ability has significant effects at a p-value of 0.05 confidence level. Regression coefficients of 0.309 indicate that control ability will affect personal growth. Control ability has positive effect. The other factors show no significant effect.

The following is regression equation 14 including the corresponding independent variables:

Equation 14： $Y_{14}=\beta_{140}+ \beta_{141}X_{141}+ \beta_{142}X_{142}+ \beta_{143}X_{143}+ \beta_{144}X_{144}+ \beta_{145}X_{145}+ \beta_{146}X_{146}+ \beta_{147}X_{147}$

Where: Y_{14}- Organization performance;

X_{141}- Planning Ability;

X_{142} - Control Ability;

X_{143} - Problem Solving Ability;

X_{144}- Role Conflict;

X_{145}- Role Ambiguity;

X_{146}- Role Overload;

X_{147}- Role Gap;

Table d.14 in Annex D shows that in the regression model of the impact of professional management competence and role pressure on organization performance, R2 is 0.448, indicating that the independent variable can explain the reason for the change of 40.1%. The F-test has a P value of 0.000, so it is determined that at least one of the independent variables has an effect on organization performance. Planning ability, problem solving ability, role overload and role gap have significant effects at p-values of 0.05 confidence level, and the regression coefficients are 0.372, 0.219, 0.098 and -0.151 indicating that four factors will affect organization performance.

Among them, planning ability, problem solving ability and role overload have positive effects on organization performance, but role gap has a negative effect. The other factors show no significant effect.

In summary, the regression results between the dimensions of the variables in this study are shown in Table 5.21:

Table 5.21 Summary of significant regression results of dimensions

Dependent Variable	Variable Dimensions	Independent Variables/Dimensions	Results
Professional management competence	Planning ability		
		Training	Not significant
		Policy Uncertainty	Significant
		Leadership Vision	Significant
		Leadership Care	Significant
	Control ability	Training	Not significant
		Policy Uncertainty	Significant
		Leadership Vision	Significant
		Leadership Care	Significant
	Problem solving ability	Training	Not significant
		Policy Uncertainty	Significant
		Leadership Vision	Significant
		Leadership Care	Significant
Role pressure	Role conflict	Training	Significant
		Policy Uncertainty	Significant
		Leadership Vision	Not significant
		Leadership Care	Not significant
	Role ambiguity	Training	Significant
		Policy Uncertainty	Significant
		Leadership Vision	Significant
		Leadership Care	Not significant
	Role overload	Training	Significant
		Policy Uncertainty	Not significant
		Leadership Vision	Not significant
		Leadership Care	Not significant
	Role gap	Training	Significant
		Policy Uncertainty	Significant

		Leadership Vision	Significant
		Leadership Care	Not significant
Job satisfaction	Career satisfaction	Planning Ability	Not significant
		Control Ability	Not significant
		Problem Solving Ability	Not significant
		Role Conflict	Significant
		Role Ambiguity	Not significant
		Role Overload	Not significant
		Role Gap	Not significant
	Personal growth	Planning Ability	Not significant
		Control Ability	Significant
		Problem Solving Ability	Not significant
		Role Conflict	Not significant
		Role Ambiguity	Not significant
		Role Overload	Not significant
		Role Gap	Not significant
Organization performance	Organization performance	Planning Ability	Significant
		Control Ability	Not significant
		Problem Solving Ability	Significant
		Role Conflict	Not significant
		Role Ambiguity	Not significant
		Role Overload	Significant
		Role Gap	Significant

Chapter 6: Discussion and Conclusion

6.1 Summary of research results

The concept of professionalization of Chinese hospital executives has been around for nearly 30 years, but the development is slow, and “Having two roles on both shoulders” (holding both administrative and clinical positions at the same time) is still the mainstream. While engaging in management work, the executives also do their medical work. People who perform better get promoted to upper management level is the majority of executives’ career development path. The executive generally lacks systematic training in management, and most of them rely on personal qualities and experience in management. In 2017, China's health system entered into a new stage of reforming the medical service provider. The government cancelled the 15% markup of drugs sold to patients in the hospital but did not give the hospital full compensation. The development model of the hospital has shifted from a large scale into cost control. The executives are facing greater operational pressure. "Having two roles on both shoulders” of the executive's original knowledge system and management ability can hardly meet the requirements of the new situation. Some executives have begun to seek more scientific management methods, but many of them are worried about their careers after leaving the executive position and therefore save more energy to invest in the medical profession, which causes role conflicts. But even more troubling for the executive is that in China, where most executives play the role of "government officials" and who face conflicts between government officials and hospital administrators, the executive's independence in the profession is in doubt. The implementation of the decree is an important indicator of the executive's performance appraisal, but also the key to the smooth development of the executive's career, the executive is often under the dual pressure of government decrees and hospital operation. The policy is often conflicting with each other or is vague, which also causes a lot of trouble and pressure for the executives. Now, the hospital operating environment has completely changed. These long-term and widespread contradictions become more prominent. They may affect the job satisfaction of the executive, but may also affect the hospital's performance. They must be highly concerned. Therefore, it is necessary to study how the competence and role pressure of executive's professional management affect executive's job satisfaction and organization performance.

After reviewing the literature, this study sorted out the dimensions of executive's professional management competence and role pressure, as well as the dimensions of job satisfaction and organization performance, and further constructed competence and role pressure of Chinese hospital executive's professional management through interviews with experts, responding to research question 1.

Then, we built two frameworks. Framework 1 responds to research question 2 about the key influencing factors of professional management competence and role pressure. In this framework, we mainly study whether and how training, policy uncertainty and leadership will affect professional management competence and role pressure. Framework 2 responds to research question 3 about how professional management competence and role pressure affect executive job satisfaction and organization performance. In this framework, we mainly study whether and how professional management competence and role pressure will affect executive job satisfaction and organization performance. Then use regression analysis to test these two frameworks and 10 hypotheses proposed in this study, and finally obtain relevant research conclusions and countermeasures.

This study defines and measures the variables as follows: professional management competence includes three dimensions - planning ability, control ability, and problem-solving ability-, all of which are positive indicators. Role pressure includes four dimensions- role conflict, role ambiguity, role overload and role gap, all of which are negative indicators. Job satisfaction includes two dimensions, i.e., career satisfaction and personal growth, all of which are positive indicators. Organization performance is single-dimensional and a positive indicator. Training and policy uncertainty variables are single-dimensional. Training is a positive indicator, and policy uncertainty is a negative indicator. Leadership includes two dimensions, leadership vision and leadership care, all of which are positive indicators. The questionnaire uses the scoring method of the Likert-type scale, which is set to 1-7 points and seven levels, 1 is strongly disagree, 7 is strongly agree.

According to the results of the regression analysis, we found support that:

- Policy uncertainty affects the executive's professional management competence;
- Leadership affects executive's professional management competence;
- Training affects executive's professional management role pressure;
- Policy uncertainty affects the executive's professional management role pressure;
- Executive’s professional management competence affects job satisfaction;
- Executive’s professional management competence affects organization performance;
- Executive’s professional management role pressure affects job satisfaction;

Finally, we found no support that:

- Training affects executive's professional management competence.
- Leadership affects executive's professional management role pressure;
- Executive’s professional management role pressure affects organization performance.

The results of this study are mainly reflected in two aspects. First, at the definition level, the new connotation of professionalism of Chinese hospital executives is explored. It includes two variables of professional management competence and role pressure, and the impact dimension is designed. The second is at the relationship level. Based on the dimensions of the variables, a sample was selected to measure the factors affecting professional management competence and role pressure, and their relationship with job satisfaction and organization performance.

6.1.1 Conceptualization of Chinese hospital executive professional management

This study believes that the professional management competence and role pressure of executives are the reasons for the slow development of professional management of hospital executives in China.

For a long time, the incompetence of executives is considered to be the biggest obstacle to the professional management of Chinese hospitals. According to the concept of competence, each position requires the corresponding ability to work, and the executive must also have a certain ability to be competent for a position. Based on the executive's interview, this study presents three competence dimensions, including planning ability, control ability and problem-solving ability. The regression analysis results of this study show that professional management competence will to some extent affect the performance of the organization, and the executive's job satisfaction. Results show that if the executive's management ability is insufficient, it is not only the reason that affects the performance of the hospital, but also the reason for the slow development of the executive's professional management.

Hospital executives generally play multiple roles in their work, and the executive's cognition of the role and the different interests or responsibilities represented by the role are inconsistent, which may lead to role pressure, affecting the job satisfaction and organization performance.

According to the concept of role pressure, this study divides the role pressure of the executive into four dimensions: role conflict, role ambiguity, role overload and role gap.

Through the interview, it is believed that the role conflict of the executive stems from two

aspects, one is the conflict between the two identities as a government official and a hospital manager, and the other is the conflict between being a doctor and a hospital manager. Statistical analysis of the data from the questionnaire found that the roles of government officials and hospital managers are the source of role conflict of executives, while doctors and managers are two roles that do not cause role conflict, nor do they cause role pressure.

Role ambiguity mainly comes from the executive's position responsibilities that are not clear, and the superior assessment indicators are contradictory and ambiguous.

The role overload is because too much administrative work takes up a lot of time, and sometimes the executives do not even eat and rest on time.

The role gap is the ability gap perceived by the manager, but it does not cause trouble to the executives. Regression analysis of this study shows that the negative effect of role pressure affects job satisfaction, in which role conflict negatively affect career satisfaction. Role pressure does not affect organization performance, but the role overload positively affects the organization performance, the role gap negatively affects the organization performance.

Therefore, an important conclusion of this study is that role pressure as a new dimension. It not only affects the executive's personal job satisfaction, but also to some extent affects the hospital's organization performance. From the study of the various dimensions of both professional management competence and role pressure, the problems of professional management of Chinese hospital executives can be more accurately and more completely understood.

6.1.2 Hypothesis testing results

When verifying H3a and H3b, the study found that professional management competence has positive effect on job satisfaction and has positive effect on hospital performance. Competence variables in this study include planning ability, control ability and problem solving ability.

Some studies show that the stronger the competence, the more control you have over the work environment, and the higher the job satisfaction (Muindi & K’Obonyo, 2015). However, there have also been studies showing that competence does not necessarily lead to high job satisfaction due to the high environmental factors that affect the job satisfaction (Judge et al., 2001). Our results also found support to this relationship, but on the dimension level, only control ability affects personal growth, other factors have no relationships with career satisfaction and personal growth.

Professional management competence is a positive indicator, indicating that the stronger

this competence, the higher the satisfaction of all parties with the hospital's development performance, which is consistent with previous research findings (Andreou et al., 2015; Milad et al., 2015). In the three dimensions of competence analyzed, planning ability and problem-solving ability positively affect organization performance, and control ability does not affect organization performance. The executive expressed a similar view in the interview.

The President's mission refers to the direction, to have the ability to strategically plan (Executive D).

As an executive, there are two things, one is good macro design, one is good micro-execution. Macro-design is to develop a strategy, to set the direction, to find differences (Executive A).

Our management system is the executive responsibility system. You have to be responsible for everything. The things in your hands are very complicated, and you have to deal with them (Executive C).

When the official is not speaking for the people, it is better to go home to sell sweet potatoes. Sitting in this position, you have a responsibility, an obligation to resolve the contradiction as far as possible. You are the last pass, and things have no other place to go (Executive F).

We then found that control ability does not affect organization performance. A possible reason is that control emphasis on oversight of management through the use of management tools. However, the "Having two roles on both shoulders" executive generally did not receive systematic management training, did not learn the concept of management tools and methods, therefore they seldom use them in the work, and did not appreciate the role of management tools. They think that the ability to control does not affect organization performance.

In validating H4a and H4b, role pressure had mostly a negative impact on job satisfaction and had no impact on organization performance. The negative impact of role pressure on job satisfaction, where role conflict negatively impacts job satisfaction, other three factors have no effect on career satisfaction and personal growth. Role conflict is a negative indicator. It shows that the greater the role pressure caused by the role conflict, the lower the job satisfaction, which is consistent with previous research (Rizzo & Lirtzman, 1970; Burke & Scalzi, 1988; Muindi & K'Obonyo, 2015; Kanbur & Canbek, 2017).

Several executives expressed the origins of role conflict, as well as the impact on job satisfaction.

Because the operation of public hospitals is self-funded, the state compensation is far from enough, but the state also has the requirements of public welfare, as well as many administrative provisions, such as to eliminate the drug markup in 2017, and then to cancel the increase in

supplies, but the national price adjustment is not to compensate for the loss from the markup cancellation. As the hospital President, the policy must be strictly enforced. At the same time, we have to find a way to fill this hole. Some of these methods are impossible to implement naturally. The payment of health insurance is also delayed …, without cash flow the hospital cannot operate …, can only go to the drug company to pay, with some unconventional ways to bargain with the government (Executive C).

There are a lot of contradictions in policies …, graded diagnosis and treatment, and appointment registration policy. Relying on the hospital itself is not possible. Hospitals do not know how to operate (Executive E).

The conclusion of this study is that the role conflict of the executive negatively affects job satisfaction, and role ambiguity, role overload and role gap do not affect job satisfaction because the executive cannot control the working environment completely. This is manifested in two aspects:

On the one hand, this is related to the status of the executive, whose income does not fluctuate with the results of individual and hospital evaluations and cannot reflect personal value through management. The selection system of the executive generally is "excellent doctors to be administrator". The executive generally has a higher IQ and Emotional Intelligence, but the assessment and income are not linked. The work achievement, growth opportunities, income and other indicators reflect satisfaction, and are about the executive's management ability.

I am not too satisfied with the current work environment, and my income is not high compared to the doctor of the same years of experience (Executive B).

Too much time spent on all kinds of boring things, hosting social events and too many unnecessary meetings. I also have to go around several times for lunch. There is no time for vacation. The assignments must be completed at any cost (Executive B).

On the one hand, the executive is the government's agent in the hospital, but the duty and rights do not match. With regard to the responsibility, the executive is responsible for the operation of the hospital, the power is very large. One person can decide to purchase equipment worth tens of millions of dollars. While the executive's responsibility is also very large, they need to be held responsibility for all the accidents in the hospital. For example, in the event of a fire, the executive needs to assume management responsibility, and may be fired in serious cases. At the same time, the executive has little power to fire any employee. There are no documents explicitly stating that an employee can be fired unless the employee violates the law. Of course, it may also be that as an agent of the government, there is no need to offend your

own personal interests in the national interest.

The mental pressure is still quite big. The executive is in charge, and you'll have to be laid off if something happens. You have to be on duty on holidays. The government's task is rigid and there is no room for bargaining (Executive H).

If I choose again, I will be a doctor. I ask my child to resign from the university student union, study hard, and not go into politics (Executive B).

Therefore, an important conclusion of the above two hypotheses is that the factor affecting the choice of professional management of Chinese hospital executives is role pressure, especially due to the contradiction and conflicts between the roles of government officials and the executive.

In the study of the relationship between role pressure and organization performance, role pressure has no impact on organization performance, but role overload has a positive effect on organization performance, the role gap has a negative effect on organization performance, and the role conflict and role ambiguity have no effect on organization performance. Role overload indicators reflect the executive's physical strength and energy. Role gap indicators reflect the executive's perceived ability gap. This explains that the more the executive is committed, the smaller the competence gap, the better the organization performance, and the same for competence.

Role conflict and role ambiguity have no effect on organization performance, and it may be that some executives, although plagued by dual identity and government orientation, can still find solutions that do not affect hospital growth and development.

Because the operation of public hospitals is self-funded, the state compensation is far from enough, but the state also has the requirements of public welfare, as well as many administrative provisions, such as to eliminate the drug markup in 2017, and then to cancel the increase in supplies, but the national price adjustment is not to compensate for the loss from the markup cancellation. As the hospital President, the policy must be strictly enforced. At the same time, we have to find a way to fill this hole. Some of these methods are impossible to implement naturally. The payment of health insurance is also delayed …, without cash flow the hospital cannot operate …, can only go to the drug company to pay, with some unconventional ways to bargain with the government (Executive C).

We are public hospitals and we have to carry out the Government's demands, otherwise I, the executive, will certainly not be able to hold on to the position. For example, assistance to remote areas gives a lot of pressure to the hospital's clinical departments ... The hard way is that we stipulate that we must have more than six months of assistance experience in order to

get promoted to senior titles. The soft approach is to combine employee vacations and assistance and offer the hospital's vacation benefits at the places where assistance is needed, where people are poor generally, bur the scenery is very good. On the one hand, employees can take leaves. They can also do a few local consultations, and the workload is not large. Hospitals, departments, doctors, and aided hospitals and other parties are very satisfied (Executive A).

Perhaps it is because the public hospital accounts for the vast majority of the medical service market. The natural growth of medical demand, including income increase, aging, urbanization, and other factors, has brought a very favorable external environment for the growth of public hospitals. That is to say, even without management, hospitals can achieve growth.

In the verification of H1a, H2a, the study found that training has no effect on professional management competence; but training positively affects role pressure, and in its four dimensions: role conflict, role ambiguity, role overload and role gap.

In this study, the training is a single-dimensional negative indicator. The measurement is the degree of dissatisfaction with the hospital management training content. At present, China's hospital management training organization is more chaotic, there is no unified teaching content and teaching form. Even if it is an organization, for the same course the curriculum is not the same. Most of the training is a case, or some popular courses. Training plans are not designed according to the situation of students. It does not provide much help for the students to improve their capability. In this study, although the respondents have received a lot of management training, about 70% of the executives think that their management knowledge comes from day-to-day management experience, rather than from management training.

The influence of training on role pressure can be considered as follows: the more dissatisfied the executives are with the training status, the higher their professional management level, and the more energy invested in management. Executives that are inclined to professional management, have clear positions and career goals, will positively affect role conflict and role ambiguity.

Combined with the hypothesis of H3b, some dimensions of competence will affect organization performance, so competence is an important part of the professional management of Chinese hospital executives. Still, the executive’s competence needs to be enhanced but the training has no impact. The conclusion is that the content and form of training and the required competence do not match. Research on training needs is required in order to improve the content and form of management training.

When verifying H1b, H2b, this study found that policy uncertainty has a negative effect on

professional management competence, and on the three dimensions of planning ability, control ability and problem solving ability; but found that policy uncertainty has positive effect on role pressure and on two dimensions of role pressure – role conflict, role ambiguity, and negative impact on another dimension - role gap.

Policy uncertainty is a negative variable. It measures the extent to which the executive understands the instability of China's new health care reform policy. Uncertainty is one of the inherent attributes of policy, requiring the executive to have planning, control, and problem-solving skills in an unstable policy environment (Mahoney et al., 2003; Hanaki et al., 2016; Kanbur & Canbek, 2017).

Familiarity with the medical reform policy can also be understood as investing more in management and engaging in professional management. It also leads to capability of clearly positioning work and goals. Role conflict, role ambiguity and role gap will be better dealt with, thus, to achieve more division of labor in management and reduce work pressure.

When I first took the work, it was busy, and then it became smooth. I set the direction at the beginning of the year, set up task well, listen to the report regularly. Then I was not busy. The work assigned by the government must be completed, and we have ways to do it well and the pressure is not great (Executive A).

There are too many things to do. I cannot finish them all. As long as you have the workflow, it's okay, it's just that the cost of coordination is too high (Executive J).

When validating H1c, H2c, the study found that leadership has positive impact on professional management competence and has no impact on role pressure. On dimension level, leadership vision and leadership care have a positive impact on the three dimensions of professional management competence: planning ability, control ability, and problem-solving ability. When it comes to role pressure, leadership vision affects two of the four dimensions: role ambiguity and role gap. And leadership care does not affect all dimensions of role pressure.

Leadership in this study is a positive indicator. The measurement content is a transformational leadership style, including two dimensions of leadership vision and leadership care. Transformational leadership is the representative of the new leadership theory. Typical transformational leaders have strong strategic and humanistic consciousness. They will provide clear goals for employees by showing their vision and encouraging employees to work hard through humanistic care. Therefore, an executive with a transformational leadership style generally has the ability to plan and solve problems, and then narrowing the role ambiguity and role gap.

In fact, a transformational leadership style can be seen more as a personal management trait,

a management style to influence employees. The executives hold several positions, so they have to deal with the contradictions between the government and the medical department, and various departments and many medical experts in the hospital. The executive not only needs long-term strategic ability, but also very flexible caring means to deal with complex interpersonal relationships. In reality, it is also found that most executives who lead hospitals to achieve leap-forward development have very amiable characteristics, whereas simple and rough ones hardly win respect in complex environment, and the development of hospitals is relatively slow.

6.2 Research contributions

The academic and practical contributions of this study to the professionalization of Chinese hospital executives are as follows.

6.2.1 Academic contributions

In terms of academic contributions, there are four main points:

First, this study puts forward the professional management model of Chinese hospital executives. In the literature on the professional management of Chinese hospital executives, there are two shortcomings. One is that the research content is not comprehensive enough, and the other is the lack of quantitative research. Existing research may focus on what factors are influencing professional management. This study also included the influencing factors and outcomes of professional management of Chinese hospital executives into two frameworks, which included seven variables and fourteen dimensions.

Second, this study provides a new perspective for the professional management research of Chinese hospital executives. Previous studies on the professionalization of Chinese hospital executives have discussed more about what competences are required for hospital executives. Few studies have examined the various role pressures that executives face in professional management. Even fewer scholars have studied the impact of executives' professional management competence and role pressure on job satisfaction and organization performance. After the operating environment of Chinese hospitals changed, the definition of professional management also became more blurred. This research makes up for this shortcoming. Through quantitative research, it is confirmed that role pressure has impact on the job satisfaction of the executive, but no impact on performance of the hospital. Professional management competence has impact on job satisfaction of the executive and the organization performance of the hospital.

It shows that professional management competence and role pressure are key factors that affect the executives. For the career choice of Chinese hospital executives, alleviating the pressure on the role as the hospital executive is more critical. Therefore, this study redefines the professional management of Chinese hospital executives from the perspective of the professional management competence and role pressure, by looking at the dimensions of each of these variables, their influencing factors, as well as their outcomes.

Third, this study has designed measurement indicators for the professional management competence and role pressure of Chinese hospital executives. In the research on the professionalization of hospital executives in China, there are many qualitative studies and quantitative studies focusing on the construction of the executive's professional management competence system. To the best of our knowledge, no scholar has talked about how to measure the role pressure of the executive, so there is no study that can quantitatively measure the influence of executive's competence and role on other variables. In this study, measurement indexes were designed for the seven variables involved. In particular, role pressure variables are measured from four dimensions: role conflict, role ambiguity, role overload and role gap. In addition, based on interviews, we designed new requirements for hospital executives on changes in the operating environment of the hospital, and measured the competence of Chinese hospital executives from the three dimensions of planning ability, control ability, and problem-solving ability. And finally, we established the Competence Scale of Chinese hospital executives.

Fourth, this study confirms that training, policy uncertainty and leadership affect the professional management of executives. Literature review shows that in the research that affects the professional management of Chinese hospital executives, management training and competence is popular, while policy uncertainty and leadership are rarely mentioned, nor is there any quantitative research to confirm the relationship between it and the professional management of the executive. This study set the three variables of training, policy uncertainty and leadership as influencing factors. It designed measurement indicators to confirm that all three factors have impacts on the professional management competence and role pressure of Chinese hospital executives through quantitative studies, except that training does not affect professional management competence and leadership does not affect role pressure.

6.2.2 Practical contributions

In terms of management contributions, there are three points:

First, this study redefines the professional management of Chinese hospital executives from the two dimensions of professional management competence and role pressure, and provides a new perspective for the government, the executive and other stakeholders to understand the professional management of the executive. In the past, the government, executives, various training institutions and other stakeholder groups all thought that the problem of the slow development of the executive's professional management concentrated on the executive's competence. This study confirmed that competence and role pressure have to some extent affected the executive's job satisfaction and organization performance, but the path is different.

For the government, management objectives are different and the level of focus on competencies and roles will vary. In view of the goal of improving the performance of the organization, whether from the government or the executives themselves, we need to start with the ability, especially to strengthen the planning ability and problem-solving ability. In order to improve the job satisfaction of the executive, we must start with the role, redefine the role and responsibility of the executive, reduce the role conflict brought about by the role pressure, encourage the executive to put more energy into professional management.

Second, this study quantitatively studies professional management competence and role pressure, providing a measurement tool for the professional management of executives. Stakeholders can measure the executive's professional management status through the scale of this study.

For the government, the professional management status of executives can be measured and the reasons for their professional management can be analyzed accordingly. It can also be used to select an executive by understanding the candidate's understanding of professional management, or to measure his or her competence. Research shows that leadership affects competence. Therefore, when selecting leaders, you can use the transformational leadership style as a condition of employment and measure its transformational leadership style.

For those who have the opportunity or are interested in hospital management, understanding the pressures and challenges faced by the executive from the perspective of the role is more helpful in making the right judgment in the early stages of career planning.

For training institutions, the scale can be used to manage the evaluation of training. Using the Kirkpatrick level four training assessment framework, combined with professional management competence and role pressure scales, the evaluation of the training effectiveness will be more effective.

Third, this study provides ideas for improving the level of professional management. From a role perspective, role pressure affects job satisfaction, so the role pressure must be alleviated.

At the same time, it is important to promote professional management competence because competence is directly affecting organization performance.

For the government, it is important to realize that the source of the role pressure is not a role conflict between the manager and the medical expert, but a conflict between the role of the manager and the role of the government official. The keys to solving the problem of the executive's professionalization are designing a reasonable corporate governance structure and clarifying the executive's hospital manager's status. The measures that can be taken in the short term are that the government should try to achieve uniform government orders, avoid multiple management to reduce the pressure caused by role conflict. In reducing the role overload, the government department can reduce some checks, use more information tools with the hospital to extract data directly, so that the executive can put more energy in management.

For the executive, the matching of professional management competence and the role pressures both need to be actively overcome. In the face of role conflict, position yourself first, and then seek the unity of the interests of the government, hospitals, and employees in the conflict. We need to strengthen learning management knowledge and policies, use management tools to improve management efficiency, make room for public welfare services, understand the trend of health care reform and policy’s meaning, and have good strategic planning. In the face of excessive overload, we need to reduce the burden through the division of labor, improve their own management capacity and other means, thereby easing the pressure.

Research shows that training has no effect on competence, and we believe that the contradiction between supply and demand in the content and form of management training is the biggest problem. Training institutions need to start from the demand. On the one hand, they can teach management knowledge through degree courses and make up for the deficiencies that generally result from the lack of management knowledge. On the other hand, they can use "practical" training to help learning through actual problems encountered in management. The specific management tools aim at solving practical problems. The action-based teaching method is adopted to help the executive fully grasp the specific tools. The logic of the training content should be to instill management system and knowledge through cases and knowledge points, which can attract the attention of students in a short period of time.

In addition, policies influence professional management competence and role pressures. Policy interpretation could be included in the training, in particular with a study focusing on the lack of specific requirements and practices to reduce the role pressure of uncertainty.

Research shows that leadership affects competence. As a personal trait, focus on a transformational leadership style can be added to the training. Because from the perspective of

leadership variables, a transformational leadership style has the competencies needed to achieve high performance of the organization.

6.3 Research limitations and future research directions

6.3.1 Limitations

(1) The questionnaire asked more questions, which limited the sample size to a certain extent. The measurement frameworks introduced seven variables: professional management competence, role pressure, training, policy uncertainty, leadership, job satisfaction, and organization performance. There are fourteen dimensions and nearly 100 indicators. The filling time of each questionnaire is about 20 minutes, and the recovery rate is not high. However, according to the number of questionnaires, the measurement model's reliability and validity are high, the degree of significance and non-significance are very clear, which does not affect the data analysis.

(2) Due to the limited sample size, there is no sample classification study. However, according to the description of the subjects in the first chapter, the academic qualifications and working background of the executive of Chinese hospitals, as well as the contradictions encountered are basically the same. The overall description and analysis are necessary, and the study can be achieved without classification.

(3) The study of the relationship between variables is not sufficient. This study is a regression analysis of the variables and the relationship between dimensions of variables. The intermediary role of professional management competence and role pressure has not been studied. The purpose of this study is to explore the definition of professional management of executives, and how to measure competence and role pressure. Measuring at the variable and dimensional level is more in line with the purpose of research and does not affect the conclusion.

(4) The static perspective of this study defines the professional management of Chinese hospital executives. However, based on the purpose of this study, it is necessary to understand the attitude of the executive towards professional management under the current situation of medical reform, and to define the professional management from the dimensions of the executive's competence and role pressure.

6.3.2 Future research directions

The current shortcomings of this study can serve as a starting point for continuing research.

(1) Increase the sample size through specific channels. Expand partnerships, such as trade associations, training and various management meetings, and issue questionnaires when there are many executives, in order to increase the sample size.

(2) The refinement study is carried out through the further design and classification of control variables. Different property attributes such as public and non-public, different regions such as China's eastern and western regions, for different sizes such as Level III A and B hospitals, II A and B hospitals should be compared; and cross-comparison of these variables will help understand the views and choices of executives of different institutions and individual backgrounds. Based on this, it may be possible to design a more targeted professional training system, as well as safeguarding systems and measures.

(3) Improve research tools, carry out a more detailed study of the variables and dimensions of this study, study the relationship between dimensions and variables, and study whether there is an intermediary role in role pressure and competence variables.

(4) The reform of China's medical system is still in progress. The reform of the medical service provider will become the focus of the new medical reform. The change of the executive's professional management will naturally be more intense than ever, and it more easily becomes the focus. There is a need for some follow-up research to reflect the changes in the professional management of Chinese hospital executives.

6.4 Conclusion

In China, hospital executive’s professional management is a sensitive topic, the executive is mostly "Having two roles on both shoulders", engaging in management and clinical practice at the same time, even "main job as a doctor, amateur as a manager". If professional management is selected, does it mean that the medical profession must be abandoned, and all efforts must be devoted to management? Is "Having two roles on both shoulders" the main obstacle? This study holds that the roles of doctors and hospital managers are not the main factors that make up the role pressure of the of the executive, and the role of government officials and hospital managers are the main reasons for the pressure of the executives. Therefore, this study redefines the professional management of Chinese hospital executives.

This dissertation finds that professional management competence affects both organization performance and the executive's job satisfaction. Role pressure affects job satisfaction but no organization performance. Role overload and role gap affect organization performance, so alleviating the role pressure of the executive has greater significance for improving the

professional management of the executive. Training variable affects the role pressure variable, but does not affect the competence variable, which explains that training needs to be significantly improved in content design to suit the executive's management demand. Policy uncertainty variable affects both professional management competence and role pressure variables. Leadership includes two dimensions, leadership vision and leadership care, which affect professional management competence variable, while only leadership vision affects role ambiguity and role gap of role pressure.

The academic contribution of this study lies in the research frameworks of professional management of Chinese hospital executives and explains the reasons for the stagnation of professional management of Chinese hospital executives from the perspective of role pressure. It combined the three dimensions of professional management competence, and measured the impact of competence and role pressure on executive job satisfaction and organization performance.

The practical contribution is to advise all stakeholders in the executive's professional management. For the government, governance structure, and policy promulgation are the key to improve the professional management competence and ease the pressure on the role of the executive. For the executive, strengthen management knowledge learning and policy study can enhance the ability to relieve the pressure, and self-positioning is also very important. However, the training institutions need to do a good job of demand research, and practical training is more appropriate.

Bibliography

Ackerly, D. C., Sangvai, D. G., Udayakumar, K., Shah, B. R., Kalman, N. S., & Cho, A. H., et al. (2011). Training the next generation of physician–executives: an innovative residency pathway in management and leadership. *Academic Medicine, 86* (5), 575-579.

Aguinis, H. & Kraiger, K. (2009). Benefits of training and development for individuals and teams, organizations, and society. *Annual Review of Psychology, 60* (1), 451-474.

Ahire, S. L., Golhar, D. Y., & Waller, M. A. (2010). Development and validation of TQM implementation constructs. *Decision Sciences, 27* (1), 23-56.

Aluise, J. J., Vaughan, R. W., & Vaughan, M. S. (1994). The new health care civilization: Itegration of physician land and managerial. *Physician Executive*, *20* (7), 3.

Ambrose, S. C., Rutherford, B. N., Shepherd, C. D., & Tashchian, A. (2014). Boundary spanner multi-faceted role ambiguity and burnout: an exploratory study. *Industrial Marketing Management, 43* (6), 1070-1078.

Anderson, K. A. (2011). The impact that leadership practices of the nurse manager and nursing practice environments have on job satisfaction of registered nurses in two urban teaching hospitals. Doctoral Thesis, University of Maryland Eastern Shore, Princess Anne, Maryland.

Andreou, P. C., Ehrlich, D., Karasamani, I., & Louca, C. (2015). Managerial ability and firm performance: evidence from the global financial crisis. *SSRN Electronic Journal, 63* (2), 59-78.

Aragón-Sánchez, A., Barba-Aragón, I., & Sanz-Valle, R. (2003). Effects of training on business results. *The International Journal of Human Resource Management, 14* (6), 956-980.

Armstrong, M. (2014). A handbook of human resource management practice 10th edition. *Manager, 95* (4), 124-130.

Arthur, M. B., Khapova, S. N., & Wilderom, C. P. M. (2005). Career success in a boundary less career world. *Journal of Organizational Behavior, 26* (2), 177-202.

Avolio, B. J., Bass, B. M., & Jung, D. I. (1999). Reexamining the components of transformational and transactional leadership using the multifactor leadership. *Journal of Occupational and Organizational Psychology, 72* (4), 441-462.

Ayres, J. & Malouff, J. M. (2007). Problem-solving training to help workers increase positive affect, job satisfaction, and life satisfaction. *European Journal of Work and Organizational Psychology, 16* (3), 279-294.

Babbie E. (2005). *Methodology for Social Research (10th edition)*. Beijing, China: Huaxia Press.

Bailey, S., Checkland, K., Hodgson, D., Mcbride, A., Elvey, R., & Parkin, S., et al. (2017). The policy work of piloting: mobilizing and managing conflict and ambiguity in the English NHS. *Social Science & Medicine, 179*, 210-217.

Bankes, S. (1993). Exploratory modeling for policy analysis. *Operations Research, 41*, 435-449.

Barber, J. (2004). Skill upgrading within informal training: lessons from the Indian auto mechanic. *International Journal of Training and Development, 8* (2), 128-139.

Barber, S. L., Borowitz, M., Bekedam, H., & Ma, J. (2014). The hospital of the future in China: China's reform of public hospitals and trends from industrialized countries. *Health Policy & Planning, 29* (3), 367-78.

Baroudi, J. J. (1985). The impact of role variables on is personnel work attitudes and

intentions. *MIS Quarterly, 9* (4), 341-356.
Barringer, B. R. & Bluedorn, A. C. (1999). The relationship between corporate entrepreneurship and strategic management. *Strategic Management Journal*, *20* (5), 421-444.
Bass, B. M. & Bernard, M. (1999). Two decades of research and development in transformational leadership. *European Journal of Work and Organizational Psychology, 8* (1), 9-32.
Bass, B. M. (1985). Leadership and Performance beyond Expectation. New York: Free Press.
Bass, B. M. (1998). Transformational leadership: industrial, military, and educational impact. Mahwah: Lawrence Erlbaum Associates.
Bateman, T. S. & Crant, J. M. (1993). The proactive component of organizational behavior: a measure and correlates. *Journal of Organizational Behavior, 14* (2), 103-118.
Bertrand, M. & Schoar, A. (2003). Managing with style: the effect of managers on firm policies. *Quarterly Journal of Economics, 118* (4), 1169-1208.
Bird, A. & Beechler, S. (1995). Links between business strategy and human resource management strategy in U.S. based Japanese subsidiaries: an empirical investigation. *Journal of International Business Studies, 26* (1), 23-46.
Black, S. A. & Porter, L. J. (1996). Identification of the critical factors of TQM. *Decision Sciences, 27* (1), 1-21.
Blair, J. D. & Payne, G. T. (2000). The paradox prescription: leading the medical group of the future. *Health Care Management Review, 25* (1), 44.
Boella, G. & Torre, L. V. D. (2007). The ontological properties of social roles in multi-agent systems: definitional dependence, powers and roles playing roles. *Artificial Intelligence and Law, 15* (3), 201-221.
Bontis, N., Switzer, L. N., & Huang, Y. (2007). How does human capital affect the performance of small and mid-cap mutual funds? *Journal of Intellectual Capital, 8* (4), 666-681.
Borman, W. C. & Motowidlo, S. J. (1997). Task performance and contextual performance: the meaning for personnel selection research. *Human Performance, 10* (2), 99-109.
Bossert, T. J. & Beauvais, J. C. (2002). Decentralization of health systems in Ghana, Zambia, Uganda and the Philippines: a comparative analysis of decision space. *Health Policy and Planning, 17* (1), 14-31.
Bossert, T. J. & Mitchell, A. D. (2011). Health sector decentralization and local decision-making: decision space, institutional capacities and accountability in Pakistan. *Social Science and Medicine, 72* (1), 39-48.
Bowling, N. A. & Hammond, G. D. (2008). A meta-analytic examination of the construct validity of the Michigan organizational assessment questionnaire job satisfaction subscale. *Journal of Vocational Behavior, 73* (1), 63-77.
Boyar, S. L., Maertz, C. P., Pearson, A. W., & Keough, S. (2003). Work-family conflict: a model of linkages between work and family domain variables and turnover intentions. *Journal of Managerial Issues, 15* (2), 175-190.
Brown, S. P. & Peterson, R. A. (1993). Antecedents and consequences of salesperson job satisfaction: meta-analysis and assessment of causal effects. *Journal of Marketing Research, 30* (1), 63.
Burke, G. C. & Scalzi, C. C. (1988). Role stress in hospital executives and nursing executives. *Health Care Management Review, 13* (3), 67-72.
Burns, J. M. (1978). *Leadership*. New York: Harper & Row.
Butcher, L. (2011). The rapid growth of MD/MBA programs: Are they worth it. *Physician Executive, 37* (1), 22-26.
Campbell, N., Mcallister, L., & Eley, D. (2012). The influence of motivation in recruitment and retention of rural and remote allied health professionals: a literature review. *Rural & Remote Health, 12* (3), 1900.

Celik, K. (2013). The effect of role ambiguity and role conflict on performance of vice principals: the mediating role of burnout. *Eurasian Journal of Educational Research (EJER),13* (51), 195-214.

Chandler, G. N. & Hanks, S. H. (1993). Measuring the performance of emerging businesses: a validation study. *Journal of Business Venturing, 8* (5), 391-408.

Chemmanur, T. J. & Paeglis, I. (2005). Management quality, certification, and initial public offerings. *Journal of Financial Economics, 76* (2), 331-368.

Chemmanur, T. J. & Simonyan, P. K. (2010). Management quality and equity issue characteristics: a comparison of SEOs and IPOs. *Financial Management, 39* (4), 1601-1642.

Chen, Z. (2003). *Public Policy Analysis.* Beijing: China: China Renmin University Press. In Chinese.

Chen, Y. & Lei Y. (2004). Review and development trends of competence research and application. *Research Management*, (06), 141-144.

Chen, Y. M., Chen, S. H, Tsai, C. Y., & Lo, L. Y. (2007). Role stress and job satisfaction for nurse specialists. *Journal of Advanced Nursing, 59* (5), 497-509.

Chiu, S. F., Yeh, S. P., & Huang, T. C. (2015). Role stressors and employee deviance: the moderating effect of social support. *Personnel Review, 44* (2), 308-324.

Chonko, L. B. (1982). The relationship of span of control to sales representatives experienced role conflict and role ambiguity. *The Academy of Management Journal, 25* (2), 452-456.

Claiborne, N., Auerbach, C., Zeitlin, W., & Lawrence, C. K. (2015). Climate factors related to intention to leave in administrators and clinical professionals. *Children and Youth Services Review, 51*, 18-25.

Colakoglu, S. N. (2011). The impact of career boundarylessness on subjective career success: the role of career competencies, career autonomy, and career insecurity. *Journal of Vocational Behavior, 79* (1), 47-59.

Collins, D. B. & Holton, E. F (2004). The effectiveness of managerial leadership development programs: a meta-analysis of studies from 1982 to 2001. *Human Resource Development Quarterly, 15* (2), 217-248.

Colquitt, J. A., Lepine, J. A., & Noe, R. A. (2000). Toward an integrative theory of training motivation: a meta-analytic path analysis of 20 years of research. *Journal of Applied Psychology, 85* (5), 678-707.

Covin, J. G. & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice, 16* (1). 7-26.

Cui, D. (2012). *Research on professional development strategies for the executives of public hospitals.* Doctoral Thesis, Huazhong University of Science and Technology. In Chinese.

Curran, T. M. & Prottas, D. J. (2017). Role stressors, engagement and work behaviors: a study of higher education professional staff. *Journal of Higher Education Policy and Management, 39* (6), 1-16.

DZurilla, T. J. & Goldfried, M. R. (1971). Problem solving and behavior modification. *Journal of Abnormal Psychology, 78* (1), 107-126.

Daire, J., Gilson, L., & Cleary, S. (2014). RESYST Working Paper 4: Developing leadership and management competencies in low and middle-income country health systems: a review of the literature. *RESYST Consortium, London School of Hygiene and Tropical Medicine,* pp. 1-12.

Davidsson, P. (1991). Continued entrepreneurship: ability, need, and opportunity as determinants of small firm growth. *Journal of Business Venturing, 6* (6), 405-429.

Davis, F. D. & Yi, M. Y. (2004). Improving computer skill training: behavior modeling, symbolic mental rehearsal, and the role of knowledge structures. *Journal of Applied Psychology, 89* (3), 509-523.

Davis, K. A. (2007). Organizational behavior: human behavior at work. *McGraw-Hill Series in Management, 14* (2), 204-211.

Day, D. V. (2000). Leadership development: a review in context. *Leadership Quarterly, 11* (4), 581-613.

Dill, W. R. (1958). Environment as an influence on managerial autonomy. *Administrative Science Quarterly, 2* (4), 409-443.

Driskell, J. E., Johnston, J. H., & Salas, E. (2001). Does stress training generalize to novel settings? *Human Factors: The Journal of the Human Factors and Ergonomics Society, 43* (1), 99-110.

Drucker, P. (2008). Management: Tasks, Responsibilities and Practice. Part 1. Beijing, China: Huaxia Press.

Dvir, T., Eden, D., Avolio, B. J., & Shamir, B. (2002). Impact of transformational leadership on follower development and performance: a field experiment. *The Academy of Management Journal, 45* (4), 735-744.

Eby, L. T., Butts, M. M., & Lockwood, A. (2003). Predictors of success in the era of the boundaryless career. *Journal of Organizational Behavior, 24* (6), 689-708.

Edwards, J. R. & Van Harrison, R. (1993). Job demands and worker health: three-dimensional reexamination of the relationship between person environment fit and strain. *Journal of Applied Psychology, 78* (4), 628-648.

Eisenhardt, K. M. & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal, 21* (10-11), 1105-1121.

Faia, M. A. (1980). Teaching, research, and role theory. *Annals of The American Academy of Political and Social Science*, *448* (1), 36-45.

Feng, X. (2009). *Sociological Research Methods.* Beijing, China: China Renmin University Press. In Chinese.

Fernando, R. (2012). Sustainable globalization and implications for strategic corporate and national sustainability. *Corporate Governance International Journal of Business in Society, 12* (4), 579-589.

Fey, C. F., Morgulis-Yakushev, S., & Björkman, P. I. (2009). Opening the black box of the relationship between HRM practices and firm performance: a comparison of MNE Subsidiaries in the USA, Finland, and Russia. *Journal of International Business Studies, 40* (4), 690-712.

Fisher, C. D. & Ashkanasy, N. M. (2000). The emerging role of emotions in work life: an introduction. *Journal of Organizational Behavior, 21* (2), 123-129.

Fisher, C. D. & Gitelson, R. (1983). A meta-analysis of the correlates of role conflict and ambiguity. *Journal of Applied Psychology, 68* (2), 320-333.

Francis-Smythe, J., Haase, S., Thomas, E., & Steele, C. (2013). Development and validation of the career competencies indicator (cci). *Journal of Career Assessment, 21* (2), 227-248.

Frayne, C. A. & Geringer, J. M. (2000). Self-Management training for improving job performance: a field experiment involving salespeople. *Journal of Applied Psychology, 85* (3), 361-372.

Frey, D., Stahlberg, D., & Fries, A. (1986). Information seeking of high-and low-anxiety subjects after receiving positive and negative self-relevant feedback. *Journal of Personality, 54* (4), 694-703.

Gaskill, L. R., Van Auken, H., & Manning, R. A. (1993). A factor analytic study of the perceived causes of small business failure. *Journal of Small Business Management*, *31* (4), 18-31.

Gilbert, B. A., Mcdougall, P. P., & Audretsch, D. B. (2006). New venture growth: a review and extension. *Journal of Management*, *32* (6), 926-950.

Gilboa, S., Shirom, A., Fried, Y., & Cooper, C. L. (2013). A meta-analysis of work demand stressors and job performance: examining main and moderating effects. *Personnel*

Psychology, 61 (2), 227-271.
Goonan, K. J. & Stoltz, P. K. (2004). Leadership and management principles for outcomes-oriented organizations. *Medical Care, 42* (suppl), III-31-III-38.
Gray, B., Matear, S., Boshoff, C., & Matheson, P. (1998). Developing a better measure of market orientation. *European Journal of Marketing, 32* (9/10), 884-903.
Griffith, J. R. (2017). Achieving professionalism in health care organizations. *American Journal of Medical Quality, 33* (2).207-209.
Gunderman, R. & Kanter, S. L. (2009). Perspective: educating physicians to lead hospitals. *Academic Medicine, 84* (10), 1348-1351.
Gupta, P. D. & Samapti, G. (2013). Firm growth and its determinants. *Journal of Innovation and Entrepreneurship, 2* (1), 15.
Haasnoot, M., Kwakkel, J. H., Walker, W. E., & Maat, J. T. (2013). Dynamic adaptive policy pathways: a method for crafting robust decisions for a deeply uncertain world. *Global Environmental Change-human and Policy Dimensions*, *23* (2), 485-498.
Hambrick, D. C. & Mason, P. A. (1984). Upper echelons: the organization as a reflection of its top managers. *Academy of Management Review, 9* (2), 193-206.
Hamidi, Y. & Eivazi, Z. (2010). The relationships among employees' job stress, job satisfaction, and the organizational performance of Hamadan urban health centers. *Social Behavior and Personality: An International Journal, 38* (7), 963-968.
Hanaki, N., Jacquemet, N., Luchini, S., & Zylbersztejn, A. (2016). Cognitive ability and the effect of strategic uncertainty. *Theory and Decision, 81* (1), 101-121.
Hart, S. L. & Quinn, R. E. (1993). Roles executives play: CEOs, behavioral complexity, and firm performance. *Human Relations, 46* (5), 543-574.
He, B. (2014). Empirical study of the impact of the role pressure of private enterprise managers on job satisfaction. Doctoral Thesis, China University of Geology.
He, X. & Li, X. (2005). Entrepreneurial competence and business growth: an empirical study based on Chinese experience. *Economic Research,* (10), 101-111.
He, X., Lian, Y., & Shen, Y. (2007). Entrepreneur type, strategy choice and enterprise performance. *China University Management Research,* (1), 46-62. In Chinese.
Henry, J. B. (1987). MD-MBA: A dual degree whose time has come. *The Journal of the American Medical Association, 257* (13), 1727-1728.
Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Adv Int Market,* 20, 277–319.
Herzberg, F. (2011). *The Motivation to Work,* 2nd ed. New York: Wiley.
Hill, C. E. & Lent, R. W. (2006). A narrative and meta-analytic review of helping skills training: time to revive a dormant area of inquiry. *Psychotherapy: Theory, Research, Practice, Training, 43* (2), 154-172.
Hofstede, G. (1993). Cultural constraints in management theories. *The Executive, 7* (1), 81-94.
House, R. & Rizzo, J. (1972). Role conflict and role ambiguity as critical variables in a model of behavior. *Organizational Behavior and Human Performance, 7*, 467-505.
Huang, Z. & Lu, X. (2010). The competency of the executives of large public hospitals. *Medicine and Society*, *023* (005), 61-63.
Hutchinson, M. (2018). The crisis of public trust in governance and institutions: implications for nursing leadership. *Journal of Nursing Management, 26* (2), 83-85.
Intaraprasong, B., Dityen, W., Krugkrunjit, P., & Subhadrabandhu, T. (2012). Job satisfaction and organizational citizenship behavior of personnel at one university hospital in Thailand. *Journal of the Medical Association of Thailand = Chotmaihet Thangphaet, 95 Suppl 6*, S102-8.
Jackson, S. E. & Schuler, R. S. (1985). A meta-analysis and conceptual critique of research on role ambiguity and role conflict in work settings. *Organizational Behavior and Human*

Decision Processes, 36 (1), 16-78.
Jia, J., Zhao X., Yu X., & Wang G. (2013). Does entrepreneurship orientation help improve corporate performance-the intermediary effect based on the competence characteristics of entrepreneurship-oriented enterprise executives. *Nankai Management Review*, (2), 49-58. In Chinese.
Johlke, M. C., Duhan, D. F., Howell, R. D., & Wilkes, R. W. (2000). An integrated model of sales managers' communication practices. *Journal of the Academy of Marketing Science, 28* (2), 263-277.
Jonassen, D. H. (2000). Toward a design theory of problem solving. *Educational Technology Research and Development, 48* (4), 63-85.
Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: a qualitative and quantitative review. *Psychological Bulletin*, *127* (3), 376-407.
Kadir, A. R. R., Kamariah, N., Saleh, A., & Ratnawati, R. R. (2017). The effect of role stress, job satisfaction, self-efficacy, and nurses' adaptability on service quality public hospital of Wajo. *International Journal of Quality and Service Sciences, 9* (2), 184-202.
Kanbur, E. & Canbek, M. (2017). Examining effects of role stressors (role ambiguity and role conflict) on intention to leave. *Organizational Identification and Perceived Individual Performance,* 3(4), 363-375.
Kaplan, R. (1992). The balanced scorecard-measures that drive performance. *Harvard Business Review*, *70* (1), 71-79.
Karatepe, O. M. & Uludag, O. (2008). Role stress, burnout and their effects on frontline hotel employees' job performance: evidence from Northern Cyprus. *International Journal of Tourism Research, 10* (2), 111-126.
Katz, D. & Kahn, R. L. (1978). *The Social Psychology of Organizations*. New York: John Wiley & Sons.
Kearns, G. S. & Sabherwal, R. (2007). Strategic alignment between business and information technology: a knowledge-based view of behaviors, outcome, and consequences. *Journal of Management Information Systems, 23* (3), 129-162.
Keller, R. T. (1995). 'Transformational' leaders make a difference. *Research-Technology Management, 38* (3), 41-44.
Kerstholt, J. H. (1994). The effect of time pressure on decision-making behavior in a dynamic task environment. *Acta Psychologica, 86* (1), 89-104.
Kindy, A. M., Shah, I. M., & Jusoh, A. (2016). The impact of transformational leadership behaviors on work performance of Omani civil service agencies. *Asian Social Science*, *12* (3), 152-164.
Kirkpatrick, I., Kuhlmann, E., Hartley, K., Dent, M., & Lega, F. (2016). Medicine and management in European hospitals: a comparative overview. *BMC Health Services Research, 16* (2), 171.
Kong, H., Cheung, C., & Song, H. (2011). Hotel career management in China: developing a measurement scale. *International Journal of Hospitality Management, 30* (1), 0-118.
Kong, H. (2013). Relationships among work-family supportive supervisors, career competencies, and job involvement. *International Journal of Hospitality Management, 33* (1), 304–309.
Kraiger, K., Ford, J. K., & Salas, E. (1993). Application of cognitive, skill-based, and affective theories of learning outcomes to new methods of training evaluation. *Journal of Applied Psychology, 78* (2), 311-328.
Kuratko, D. F., Hornsby, J. S., & Naffziger, D. W. (1997). An examination of owner's goals in sustaining entrepreneurship. *Journal of Small Business Management*, *35* (1), 24-33.
Landry, A. Y., Hernandez, S. R., Shewchuk, R. M., & Garman, A. N. (2010). A configurational

view of executive selection behaviors: a taxonomy of USA acute care hospitals. *Health Services Management Research, 23* (3), 128-138.

Lazarus, R. S. & Launier, R. (1978) Stress-related transactions between person and environment. In Pervin, L. A. & Lewis, M. (eds), *Perspectives in interactional psychology* (pp. 287-327). Boston: Springer.

Lewin, K. (1997). *Resolving Social Conflicts and Field Theory in Social Science.* Washington, DC: American Psychological Association.

Li, C. & Shi, K. (2005). The structure and measurement of transformative leadership. *Psychology, 37* (6), 803-811.

Li W. (2006). *Hospital executive competence model study.* Doctoral Thesis, Shandong University. In Chinese.

Li, W. D., Fay, D., Frese, M., Harms, P. D., & Gao, X. Y. (2014). Reciprocal relationship between proactive personality and work characteristics: a latent change score approach. *Journal of Applied Psychology, 99* (5), 948-965.

Li, Z., Lang, F., & Zhang, G. (2003). Analysis of the content of the research literature on "Entrepreneurial Ability" in China. *Journal of Chongqing University (Social Science Edition),* (03), 120-122. In Chinese.

Liddell, W. W. & Slocum, J. W. (1976). The effects of individual-role compatibility upon group performance: an extension of Schutz's Firo Theory. *The Academy of Management Journal, 19* (3), 413-426.

Ling, W., Chia, R. C., & Fang, L. (2000). Chinese implicit leadership theory. *The Journal of Social Psychology, 140* (6), 729-739.

Lin, Y. & Li, Z. (2004). Policy burden, moral hazard and budget soft constraints. *Economic Research*, (02), 17-27.

Listed, N. A. (1987). How best to train physician-managers? *Jama, 258* (4), 475.

Liu, A. H., Gould, A. N., Rollins, M., & Gao, H. (2014). Role conflict and ambiguity confronting transnational business networkers: contrasting social stigma and relational risks for Chinese and western boundary spanners. *Industrial Marketing Management, 43* (6), 911-919.

Liu, C., Spector, P. E., & Shi, L. (2007). Cross-national job stress: a quantitative and qualitative study. *Journal of organizational behavior, 28* (2), 209-239.

Lobas, J. G. (2006). Leadership in academic medicine: capabilities and conditions for organizational success. *American Journal of Medicine, 119* (7), 0-621.

Lu, X. (2009). Research on the double-core competence model of the executive of public hospitals - take the large public hospitals in Jiangsu Province as an example. Doctoral Thesis, Nanjing University. In Chinese.

Lu, X., Huang, Z., Jiang, J., Dai, W., Zhu, Y., & Zhao, S. (2011) Evidence-based study of the competence model of the executives of large public hospitals. *China Hospital Management Journal, 27* (1), 28-31. In Chinese.

Lund, T. (2012) Combining Qualitative and Quantitative Approaches: Some Arguments for Mixed Methods Research. *Scandinavian Journal of Educational Research,* 56(2), 155-165.

MacKay, E. & O'Neill, P. (1992). What creates the dilemma in ethical dilemmas? Examples from psychological practice. *Ethics & Behavior, 2* (4), 227-244.

Madera, J. M., Dawson, M., & Neal, J. A. (2013). Hotel managers' perceived diversity climate and job satisfaction: the mediating effects of role ambiguity and conflict. *International Journal of Hospitality Management, 35*, 28-34.

Mahoney, L. S., Roush, P. B., & Bandy, D. (2003). An investigation of the effects of decisional guidance and cognitive ability on decision-making involving uncertainty data. *Information and organization, 13* (2), 85-110.

Mainemelis, C., Kark, R., & Epitropaki, O. (2015). Creative leadership: a multi-context

conceptualization. *The Academy of Management Annals, 9* (1), 393-482.
Man, T. W. Y., Lau, T., & Chan, K. F. (2002). The competitiveness of small and medium enterprises: a conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing, 17* (2), 123-142.
Mansfield, R. S. (1996). Building competency models: approaches for HR professionals. *Human Resource Management, 35* (1), 7-18.
Martell, K. & Carroll, S. J. (1995). Which executive human resource management practices for the top management team are associated with higher firm performance? *Human Resource Management, 34* (4), 497-512.
McClelland, D. C. (1973). Testing for competence rather than for intelligence. *American Psychologist, 28* (1), 1-14.
McConnell, C. (2008). The health care professional as a manager: balancing two important roles. *Health Care Manager, 27* (3), 277-284.
Miao, Q. & Wang, C. (2003). Entrepreneur competence model based on corporate competitiveness. *Journal of The Chinese University of Geosciences (Social Science Edition), 3* (3), 18-20. In Chinese.
Milad, S., Mostafa, H. S., Mohammad, A., Ezzatollah, A., & Fereshteh, F. (2015). Performance analysis of hospital managers using Fuzzy AHP and Fuzzy TOPSIS: Iranian experience. *Global Journal of Health Science, 8* (2), 137.
Mohr, A. T. & Puck, J. F. (2007). Role conflict, general manager job satisfaction and stress and the performance of IJVs. *European Management Journal, 25* (1), 25-35.
Moorman, R. H. (1993). The influence of cognitive and affective based job satisfaction measures on the relationship between satisfaction and organizational citizenship behavior. *Human Relations, 46* (6), 759-776.
Morgan, D.L. (2013). Integrating Qualitative and Quantitative Methods: A Pragmatic Approach. Thousand Oaks: Sage Publications.
Muindi, F. & K'Obonyo, P. (2015). Quality of work life, personality, job satisfaction, competence, and job performance: a critical review of literature. *European Scientific Journal, 11* (26), 223-240.
Mullen, J. D. & Roth, B. M. (1991). *Decision Making: Its Logic and Practice*. Savage: Rowman & Littlefield.
Muse, L. A., Harris, S. G., & Field, H. S. (2003). Has the Inverted-u theory of stress and job performance had a fair test? *Human Performance, 16* (4), 349-364.
Musgrove, C. F., Ellinger, A. E., & Ellinger, A. D. (2014). Examining the influence of strategic profit emphases on employee engagement and service climate. *Journal of Workplace Learning, 26* (3/4), 152-171.
Naylor, C. D. (2006). Leadership in academic medicine: reflections from administrative exile. *Clinical Medicine, 6* (5), 488-492.
Ngo, H., Foley, S., & Loi, R. (2005). Work role stressors and turnover intentions: a study of professional clergy in Hong Kong. *The International Journal of Human Resource Management, 16* (11), 2133-2146.
Nordhall, O. & Knez, I. (2018). Motivation and justice at work: the role of emotion and cognition components of personal and collective work identity. *Frontiers in Psychology, 8*, 2307.
Othman, J., Mohammed, K. A., & DSilva, J. L. (2012). Does a transformational and transactional leadership style predict organizational commitment among public university lecturers in Nigeria. *Asian Social Science*, *9* (1), 165-170.
Papke-Shields, K. E. & Malhotra, M. K. (2001). Assessing the impact of the manufacturing executive's role on business performance through strategic alignment. *Journal of Operations Management, 19* (1), 5-22.

Parviainen, H. M., Halava, H., Leinonen, E. V. J., Kosunen, E., & Rannisto, P. H. (2018). Successful curriculum change in health management and leadership studies for the specialist training programs in medicine in Finland. *Frontiers in Public Health, 6* (271), 1-7.

Patel, M. S., Arora, V., Patel, M. S., Kinney, J. M., Pauly, M. V., & Asch, D. A. (2014). The Role of MD and MBA Training in the professional development of a physician. *Academic Medicine, 89* (9), 1282-1286.

Peirce, J. C. (2000). The paradox of physicians and administrators in health care organizations. *Health care management review, 25* (1), 7-28.

Penney, L. M. & Spector, P. E. (2005). Job Stress, incivility, and counterproductive work behavior (CWB): the moderating role of negative affectivity. *Journal of Organizational Behavior, 26* (7), 777-796.

Pham, A. N. (2015). *CEO Duality and Performance of Not-for-profit Hospitals*. Minneapolis: Walden University.

Piko, B. F. (2006). Burnout, role conflict, job satisfaction and psychosocial health among Hungarian health care staff: a questionnaire survey. *International Journal of Nursing Studies, 43* (3), 311-318.

Porras, J. I. & Anderson, B. (1981). Improving managerial effectiveness through modeling-based training. *Organizational Dynamics*, *9* (4), 60-77.

Porter, L. W. & Lawler, E. E. (1968). What job attitudes tell about motivation. *Harvard Business Review, 46* (1), 118-126.

Radoszewski, P. H. (1985). Strategies to meet increased competition for outpatients. *AORN journal, 42* (5), 666-668.

Raeissi, P. & Nasiripour, A. A. (2011). Management development in health care setting: a training model for hospital managers. *Journal of Research in Health Sciences, 7* (2), 42.

Reiter, K. L., Sandoval, G. A., Brown, A. D., & Pink, G. H. (2009). CEO compensation and hospital financial performance. *Medical Care Research & Review, 66* (6), 725.

Ren, C. (2009). *Research on the Role Conflicts of Chinese University Presidents.* Doctoral Thesis, Huazhong University of Science and Technology. In Chinese.

Reuber, A. R. & Fischer, E. (1999). Domestic market size, competences, and the internationalization of small- and medium-sized enterprises. *Research in Global Strategic Management, 7* (99), 85-100.

Rizzo, J. R. & Lirtzman, H. S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly, 15* (2), 150-163.

Robertson, I. T. (2005). Behaviour modelling: its record and potential in training and development. *British Journal of Management, 1* (2), 117-125.

Rychen, D. S. & Salganik, L. H. (2001). *Defining and Selecting Key Competencies*. Cambridge: Hogrefe & Huber.

Saaty, T. L. (2010). *Principia Mathematica Decernendi: Mathematical Principles of Decision Making*. Pittsburgh, Pennsylvania: RWS Publications.

Satterfield, J. M. & Hughes, E. (2007). Emotion skills training for medical students: a systematic review. *Medical Education, 41* (10), 935-941.

Savic, B. S. & Robida, A. (2013). Capacity of middle management in health-care organizations for working with people—the case of Slovenian hospitals. *Hum Resour Health, 11* (1), 18.

Schein, E. H. (2010). *Organizational Culture and Leadership*. San Francisco: Jossey-Bass Publishers

Schmidt, S., Roesler, U., Kusserow, T., & Rau, R. (2014). Uncertainty in the workplace: examining role ambiguity and role conflict, and their link to depression—a meta-analysis. *European Journal of Work and Organizational Psychology, 23* (1), 91-106.

Schuler, R. S., Aldag, R. J., & Brief, A. P. (1977). Role conflict and ambiguity: a sale

analysis. *Organizational Behavior & Human Performance, 20* (1), 111-128.
Schwartz, R. W. & Pogge, C. (2000). Physician leadership: essential skills in a changing environment. *The American Journal of Surgery, 180* (3), 187-192.
Seibert, S. E., Crant, J. M., & Krainer, M. L. (1999). Proactive personality and career success. *Journal of Applied Psychology, 84*, 416–427.
Seshadri, S. R., Parab, S., Kotte, S., Latha, N., & Subbiah, K. (2016). Decentralization and decision space in the health sector: a case study from Karnataka, India. *Health Policy & Planning, 31* (2), 171.
Shahbaz, W. & Shakeel, A. (2013). Role ambiguity and employee's organization-based self-esteem: moderating effect of workplace spirituality. *The Third International Conference on Business Management,* Pakistan.
Shatto, N. J. (2004). Book review: managing health services: cases in organization design and decision making. *AORN Journal, 80* (5), 962-962
Sherrill, W. W. (2000). Dual-degree MD-MBA students: a look at the future of medical leadership. *Academic Medicine, 75* (10 Suppl), S37-9.
Shi, G., Zhou, B., & Xu, W. (2018). Discussion on the construction of high-quality professional hospital management personnel team. *China Hospital Management, 445* (8), 46-47+53. In Chinese.
Shi, K., Wang, J., & Li, C. (2002). The study of the evaluation of competence characteristic models by senior managers of enterprises. *Psychology,* (3), 306-311
Shi, L. (2003). The current situation and direction of the study of work pressure. *Psychological Science,* (3). 494-497.
Shippmann, J. S., Ash, R. A., Batjtsta, M., Carr, L., & Sanchez, J. I. (2000). The practice of competency modeling. *Personnel Psychology, 53* (3), 703-740.
Siegall, M. (2000). Putting the stress back into role stress: improving the measurement of role conflict and role ambiguity. *Journal of Managerial Psychology, 15* (5), 427-435.
Siu, V. (1998). Managing by competencies - a study on the managerial competencies of hotel middle managers in Hong Kong. *International Journal of Hospitality Management, 17* (3), 253-273.
Smith, R. (2015). Advantages and barriers to transformational leadership implementation in a scientific laboratory. Doctoral Thesis, Walden University.
Solomon, M. R., Surprenant, C., Czepiel, J. A., & Gutman, E. G. (1985). A role theory perspective on dyadic interactions: the service encounter. *Journal of Marketing, 49* (1), 99-111.
Souba, W. W. (2002). Academic medicine and the search for meaning and purpose. *Academic Medicine Journal of the Association of American Medical Colleges, 77* (2), 139-44.
Spector, P. E. (1997). Job Satisfaction: Application, Assessment, Causes, and Consequences. Thousand Oaks: Sage Publishing.
Spencer, L. M. & Spencer, P. S. M. (1993). *Competence at work: model for superior performance*. New York: John Wiley and Sons Publishing.
Stoller, J. K., Berkowitz, E., & Bailin, P. L. (2007). Physician management and leadership education at the Cleveland clinic foundation: program impact and experience over 14 years. *The Journal of Medical Practice Management, 22* (4), 237-242.
Stoller, J. K. (2009). Developing physician-leaders: a call to action. *Journal of General Internal Medicine, 24* (7), 876-878.
Strand, R. (2014). Strategic leadership of corporate sustainability. *Journal of Business Ethics, 123* (4), 687-706.
Suifan, T. (2019). The effects of work environmental factors on job satisfaction: the mediating role of work motivation. *Business: Theory and Practice, 20*, 456-466.
Suliman, A. M. T. (2001). Work performance: is it one thing or many things? The

multidimensionality of performance in a middle eastern context. *The International Journal of Human Resource Management, 12* (6), 1049-1061.

Sun, D. (2012). Research on the duties and competence standards of the executive of public hospitals in China. Doctoral Thesis, Shandong University. In Chinese.

Suutari, V. & Makela, K. (2007). The career capital of managers with global careers. *Journal of Managerial Psychology, 22* (7), 628-648.

Swinth, R. L. (1971). Organizational joint problem-solving. *Management Science*, *18* (2), B68-B79.

Taylor, C. A., Taylor, J. C., & Stoller, J. K. (2008). Exploring leadership competencies in established and aspiring physician leaders: an interview-based study. *Journal of General Internal Medicine, 23* (6), 748-754.

Teas, R. K. (1983). Supervisory behavior, role stress, and the job satisfaction of industrial salespeople. *Journal of Marketing Research, 20* (1), 84-91.

Tharenou, P., Saks, A. M., & Moore, C. (2007). A review and critique of research on training and organizational-level outcomes. *Human Resource Management Review, 17* (3), 251-273.

Tubre, T. C. & Collins, J. M. (2000). Jackson and Schuler (1985) Revisited: a meta-analysis of the relationships between role ambiguity, role conflict, and job performance. *Journal of Management, 26* (1), 155-169.

Turner, A. D., Stawicki, S. P., & Guo, W. A. (2017). Competitive advantage of MBA for physician executives: a systematic literature review. *World Journal of Surgery, 42*, 1655-1665.

Van Vugt, M. & De Cremer, D. (2003). Leader endorsement in social dilemmas: comparing the instrumental and relational perspectives. *European Review of Social Psychology, 13* (1), 155-184.

Vroom, V. H. (1964). *Work and Motivation.* New York: Wiley.

Walker, W. E., Rahman, S. A., & Cave, J. (2001). Adaptive policies, policy analysis, and policymaking. *European Journal of Operational Research, 128* (2), 282-289.

Wang, M. (2007). *Empirical study of the relationship between role stress and job burnout*. Doctoral Thesis, Southwestern Jiaotong University. In Chinese.

Wang, Z. (2017). A review of role stress literature. *Economic Forum,* (8), 116-120.

Wang, Z. & Chen, M. (2002). Management competence characteristics analysis: structural equation model test. *Psychological Science,* (05), 2-5+126.

Warburton, J., Moore, M. L., Clune, S. J., & Hodgkin, S. P. (2014). Extrinsic and intrinsic factors impacting on the retention of older rural healthcare workers in the North Victorian public sector: a qualitative study. *Rural & Remote Health, 14* (3), 2721.

Wei, F., Lee, J., & Kwan, H. K. (2016). Impact of active constructive leadership and passive corrective leadership on collective organizational commitment. *Leadership & Organization Development Journal, 37* (7), 822-842.

Weil, T. P. (2014). Leadership in academic health centers in the US: a review of the role and some recommendations. *Health Services Management Research, 27* (1-2), 22-32.

Weiss, D. J., Dawis, R. V., & England, G. W. (1967). Manual for the Minnesota satisfaction questionnaire. *Minnesota Studies in Vocational Rehabilitation, 22,* 120.

Wen, L., Zhou, M., & Lu, Q. (2017). Research on the impact of creative leadership on the creativity of subordinates: scale development and verification. *Management Reviews,* (2), 129-142.

Westwood, R. I. (1993). Harmony and patriarchy: the cultural basis for 'Headship' in East Asia. *Meeting of the Academy of International Busines*s, *18* (3),445-480.

White, D. D. & Wisdom, B. L. (1985). Stress and the hospital administrator: sources and solutions. *Hospital & Health Services Administration, 30* (5), 112-119.

Widener, S. K. (2007). An empirical analysis of the levers of control framework. *Accounting,*

Organizations and Society, 32 (7-8), 0-788.
Winter, R., Taylor, T., & Sarros, J. (2000). Trouble at Mill: quality of academic work life issues within a comprehensive Australian university. *Studies in Higher Education, 25* (3), 279-294.
Wooden, M. & Warren, D. (2004). Non-standard employment and job satisfaction: evidence from the Hilda survey. *Journal of Industrial Relations, 46* (3), 275-297.
Woodruffe, C. (1993). What is meant by a competency? *Leadership & Organization Development Journal, 14* (1), 29-36.
Wu, Y. C. (2011). Job stress and job performance among employees in the Taiwanese finance sector: the role of emotional intelligence. *Social Behavior & Personality an International Journal, 39* (1), 21-31.
Wu, S. J., Melnyk, S. A., & Flynn, B. B. (2010). Operational capabilities: the secret ingredient. *Decision Sciences*, *41* (4), 721-754.
Xi, C. (2010). *Role Theory, Interaction between Individuals and Society.* Hangzhou, Zhejiang: Zhejiang University Press. In Chinese.
Xiang, C. (2003). Theory and empirical research on competence - a model of competence of senior managers of state-owned enterprises in Nanjing. Doctoral Thesis, Nanjing Normal University. In Chinese.
Xie, R. (2014). *Sociology and Life.* Beijing: World Book Publishing Company. (In Chinese)
Xu, E. & Wang, Z. (1999). The development and genre of enterprise strategic management theory. *Journal of Capital University of Economics and Trade,* (01), 27-31. In Chinese.
Xu, W., Sun, H., Wang, Z., & Qian, X. (2008). The dimension structure and measurement of Chinese enterprise's strategic executive power. *China's Industrial Economy,* (10), 99-110. In Chinese.
Yang, X. (2007). The study of the competence model of middle managers in enterprises. Doctoral Thesis, Fudan University. In Chinese.
Yao, B. & Sun, X. (2010). Review of employee role stress research. *Xi'an Institute of Finance and Economics Journal*, 2, 56-59. In Chinese.
Yao, H. (2014). Study on the professional model of the executive of China's public hospitals and their evaluation system. Doctoral Thesis, Huazhong University of Science and Technology. In Chinese.
Yin, J. (1997). Competence standard: new orientation of training for senior civil servants in the United Kingdom. *China Administration,* (11), 43-45. In Chinese.
Yip, W., Fu, H., Chen, A. T., Zhai, T., Jian, W., & Xu, R., et al. (2019). 10 Years of health-care reform in China: progress and gaps in universal health coverage. *The Lancet*, *394* (10204), 1192-1204.
Yuan, A., Pan H., & Wang T. (2001). The path to improve entrepreneurship - entrepreneur learning research. *Nature Dialectics Communication,* (01), 48-54.
Yürür, S. & Sarikaya, M. (2012). The effects of workload, role ambiguity, and social support on burnout among social workers in Turkey. *Administration in Social Work, 36* (5), 457-478.
Zaleznik, A. (1981). Managers and leaders: are they different? (HBR classic). *Journal Nursing Administration. 11* (7), 25-31.
Zeira, S. Y. (1992). Role conflict and role ambiguity of chief executive officers in international joint ventures. *Journal of International Business Studies, 23* (1), 55-75.
Zhou, W., Xin, X., Xie, B., & Qi, Q. (2015). Career competence research: overview and outlook. *Chinese Resource Development*, (07), 19-27. In Chinese.

Other References

China Hospital Association. (2014). *Survey Report on Professional Training of Chinese Hospital Directors*. Beijing, China, China Hospital Association. In Chinese.

The State Council. (1997). *Decisions on Health Reform and Development*. Beijing, China, The State Council of the People's Republic of China. In Chinese.

The State Council. (2009). *Opinions on Deepening the Reform of the Medical and Health System.* Beijing, China, The State Council of the People's Republic of China. In Chinese.

The State Council. (2012). *Deepening the Reform of the Medical and Health System in 2012.* Beijing, China, The State Council of the People's Republic of China l. In Chinese.

The State Council. (2015). *Guiding Opinions on the Pilot Project of Comprehensive Reform of Urban Public Hospitals*. Beijing, China, The State Council of the People's Republic of China. In Chinese.

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Annex A: Interview protocol

Number	Question
1	Degree and major
2	Training type, certificate, scope, content
3	What careers have you done? Position?
4	Number of years, number of employees, number of doctors, number of nurses, number of beds in hospital, number of outpatients per day
5	What do you think the Executive's job responsibilities include? Which do you think are more important? (Job responsibilities)
6	What exactly do you do? (Individual understanding of the duties of the executive) How does the deputy divide the division of labor? Why?
7	As the head of a hospital, work is limitless, how do you arrange your time and work? (If you hold multiple positions, you can guide professional and management time allocation)
8	What role do you think you played as an executive? (Different responsibilities and interests require different roles, i.e., multiple identities?) Do you have a variety of conflicting responsibilities and positions?)
9	What are the conflicts between these roles? You know what you're going to do, but you're in a dilemma, or you're not able to do it.
10	What do you think are the reasons for these role conflicts? How do you balance these conflicts?
11	In the existing hospital management system, a long-term hot topic is the executive’s multiple positions, how do you think of this problem? (If you hold multiple positions, you can guide professional and management how to coordinate)
12	In the existing hospital management system, as the executive, do you feel that the higher authority has a vague definition of the scope of the hospital executive's duties, performance evaluation, etc.? What exactly is this?
13	Under the existing hospital management system, as the executive, do you feel that there is a vague demand about the implementation of some policies issued by the superior authority on the hospital? What exactly is this?
14	Under the existing hospital management system, do you feel that as an executive you are very uncertain about your career development when you are not the executive in the future? What exactly is this?
15	Do you think the workload or pressure to be an executive is too much? What's the main experience?
16	What causes these stresses? At the same time, how do you deal with this stress?
17	If role pressure can be alleviated, will your personal and hospital performance be improved? What exactly is this?
18	The state has been encouraging the professionalization of executives, how do you define the professionalization of executives? What exactly is this?
19	Under the current hospital management system, what difficulties do you think there are to realize the professional management of the executive?
20	What abilities do you think a professional executive need? What exactly is this?
21	In what ways do you think these capabilities can be improved?

22	What kind of training is required to improve these competencies? What form and content are available?
23	What aspects of management training of Chinese hospital executives need to be improved?
24	What makes you a successful executive? How do you define a successful executive at the personal performance level?
25	Do you think there's any relationship between personal success and hospital success? So how to evaluate the improvement of hospital performance under personal success, what are the dimensions? (Emphasis on relevance in interviews, as environmental factors can also improve performance)
26	What do you think is the impact of the executive's professionalization (competence) and the level of role pressure on the main aspects and indicators of the executive's personal success (or performance)?
27	What do you think is the impact of the executive's professionalization (competence) and role pressure on the main aspects and indicators of these hospital successes (or performance)?
28	Can you tell an example of applying training results to your work, improving your personal abilities, and improving your personal and hospital success (performance)?

Annex B: Questionnaire Survey

Hospital Executive's Professional Management Research Questionnaire:

Hello! Thank you very much for your participation in supporting this important study on professional management of hospital executives. We hope that by understanding the personal experience and real thoughts of the executives, we will study and provide methods to help hospital executives improve their professional management and performance. The data collected in this research questionnaire is used for pure research purposes. The statistical analysis of the data is based on the comprehensive results of all questionnaires. No personal or unit data will be analyzed or evaluated. Therefore, please answer all questions based on your own personal experience and true feelings.

After receiving the complete and valid questionnaire provided by you, (1) we will give you an upgraded version of the "Speed Change Leadership-Manager Leadership Advanced Guidebook" published in June 2019; (2) for every 50 completed and valid questionnaires, we will draw a respondent and offer a prize: Samsonite shoulder computer bag; (3) after the study is completed, we will provide you with a research summary report;

Thank you for your support of this research work!

Based on your personal experience and true feelings, circle a number to indicate your consent to each of the following statements (1 is strongly disagree and 7 is strongly agree). There are no objective answers or criteria for answering these questions. Please answer based on your own experience.

1. Hospital leadership challenge	Strongly Disagree	Agree
Different superiors put forward different mission goals for the hospital that are difficult to complete at the same time, which put me in dilemma	1	2
Relevant policies of higher authorities are contradictory in time, which cause me difficulties	1	2

Superior's policies are inconsistent with objectives	1	2
There is a contradiction between the hospital's own development and the performance goals of superiors	1	2
The administrative level will affect my full exercise of my duties as an executive.	1	2
Hospital culture and administrative system conflict, and cannot be taken into account at the same time	1	2
The government's inadequate funding to public hospitals and the requirement for hospitals to do public welfare causes great contradictions	1	2
I'm not very clear about the top design of the national health service system.	1	2
I'm not very clear about the policy implications of the executive's responsibility under the leadership of the Party Committee	1	2
I'm not very clear about the impact of the cancellation of the drug and consumable markups on the operation of the hospital	1	2
I'm not very clear about the path of the Modern Hospital Management System.	1	2
I'm not very clear about the impact of graded care on hospital operations.	1	2
I'm not very sure how to deal with commercial bribery in hospitals.	1	2
Difficult to balance clinical professional and administrative management, I want to give up clinical work	1	2
It's difficult to balance clinical profession and administrative work, and I want to give up my administrative work.	1	2
I have a chance to develop in clinical discipline, but as an executive I have to give up the clinical career.	1	2
Different departments within the hospital have difficulties to unify their respective requirements, which make it difficult for me to choose	1	2
My former colleagues in the department wanted to use my position to provide them with more resources, which made me very embarrassed.	1	2
I think the requirements of the health care reform policy for hospitals are not clear and difficult to implement.	1	2
I think the parent department's definition of my job responsibilities is very vague.	1	2
I feel like my role as an executive is vague.	1	2
I'm not sure how my supervisor evaluates my performance.	1	2
I don't know where I'm going after I leave the executive job.	1	2
I often have to continue work during off hours	1	2
Unimportant meetings and receptions take me so much time that I can't finish the important work.	1	2
A lot of work has nothing to do with hospital development, but I have to attend in person.	1	2

	I can't guarantee to eat on time because of work.	1 2
	I can't take time off because of my work.	1 2
	The tasks and goals assigned by my superiors make it difficult for me to sleep.	1 2
	I lack the management knowledge and skills to do my job effectively	1 2
	My superiors expect more than I can.	1 2
	The expectations of the employees exceed my abilities	1 2
	Expectations from employees exceed my ability	1 2
Problems in the current vocational training of the executive		
	Too much theoretical content of training, little introduction of practical tools	1 2
	Content is too broad; the position is not targeted	1 2
	There are few cases from the medical service industry, and the relevance is not strong	1 2
	Training content is not systematic	1 2
	Tools will not be applied without follow-up training coaching	1 2
	Other (please label):	1 2

2. Leadership

Based on your personal experience and real feelings, circle a number to indicate your consent to each of the following statements (1 is strongly disagree and 7 is strongly agree). There are no objective answers or criteria for answering these questions. Please answer based on your own experience.

		Strongly Disagree						Strongly Agree
a	I don't care about my own personal pay and rewards in my work.	1	2	3	4	5	6	7
b	I will first mention the contributions of others to the work I do with them.	1	2	3	4	5	6	7
c	I can share the pain with my employees.	1	2	3	4	5	6	7
d	I meant it when I say yes. I won’t promise anything that I won’t do.	1	2	3	4	5	6	7
e	I'm going to paint a picture of the future of the hospital.	1	2	3	4	5	6	7
f	I can make employees understand the values and mission of the hospital.	1	2	3	4	5	6	7
g	I can keep employees informed about the hospital's development	1	2	3	4	5	6	7

	goals.							
l	I'll explain to employees what they're doing.	1	2	3	4	5	6	7
i	I patiently teach the staff, and answer questions for the staff	1	2	3	4	5	6	7
j	I will take into account the personal difficulties and requirements of the employee when I arrange my work	1	2	3	4	5	6	7
l	I can always listen to employees' suggestions and opinions	1	2	3	4	5	6	7
]	I care about the work, life and growth of my employees and sincerely advise them on their development.	1	2	3	4	5	6	7
ı	I focus on creating opportunities and conditions where employees can develop their strengths	1	2	3	4	5	6	7
ı	I am open-minded and have a strong sense of innovation	1	2	3	4	5	6	7
(	I look more energetic than my colleagues around me.	1	2	3	4	5	6	7
]	I don't complain about working overtime.	1	2	3	4	5	6	7
(	I can keep learning to enrich and improve myself	1	2	3	4	5	6	7
ı	I dare to take care of / good at dealing with difficult problems	1	2	3	4	5	6	7
s	I often make it clear to my employees that each person can earn a reward by achieving his or her job goals.	1	2	3	4	5	6	7
t	I set up a clear and detailed approach to evaluating employee performance	1	2	3	4	5	6	7
ı	When subordinates accomplish their goals, I let them know that I'm happy.	1	2	3	4	5	6	7
'	I think economic incentives are the most effective incentive.	1	2	3	4	5	6	7
'	I'm familiar with all the mistakes in hospital work.	1	2	3	4	5	6	7
;	I deal with employee misunderstandings, complaints and failures in a timely manner	1	2	3	4	5	6	7
'	I guide my subordinates to pay attention to mistakes at work.	1	2	3	4	5	6	7
;	I value bias, errors and unconventional matters in hospital work	1	2	3	4	5	6	7
;	I often don't understand the hidden problems in our hospital work.	1	2	3	4	5	6	7
l	I often wait for things to go wrong before I start paying attention.	1	2	3	4	5	6	7
(	I often have problems too serious to intervene.	1	2	3	4	5	6	7
(	The same problems I've dealt with will recur.	1	2	3	4	5	6	7
(	I spend time at work building off-hospital networks with other people	1	2	3	4	5	6	7
f	When I communicate with other people, I try to be honest with my words and deeds.	1	2	3	4	5	6	7
g	Almost intuitively I know how to influence other people with words and actions.	1	2	3	4	5	6	7
l	I can make most people around me feel comfortable and at ease.	1	2	3	4	5	6	7
i	I'll agree with the hospital team before I decide what to do.	1	2	3	4	5	6	7

3. Hospital Management

Based on your personal experience and real feelings, circle a number to indicate your consent to each of the following statements (1 is strongly disagree and 7 is strongly agree). There are no objective answers or criteria for answering these questions. Please answer based on your own experience.

		Strongly Disagree						Strongly Agree
a	I can make long-term development plans according to the hospital vision.	1	2	3	4	5	6	7
b	I am concerned about the impact of changes in the internal and external environment on the hospital strategy.	1	2	3	4	5	6	7
c	I develop a specific annual work plan according to the hospital's strategic objectives	1	2	3	4	5	6	7
d	I'll break the plan down into executable tasks.	1	2	3	4	5	6	7
e	During the implementation of the plan, I set a range of measurable small goals	1	2	3	4	5	6	7
f	I monitor schedule progress with performance goals as the priority	1	2	3	4	5	6	7
g	I use program management tools to monitor program progress regularly	1	2	3	4	5	6	7
h	I can constantly adjust the hospital strategic plan according to the changes in the environment inside and outside the hospital.	1	2	3	4	5	6	7
i	In the work I can distinguish the main, grasp the key questions	1	2	3	4	5	6	7
j	I can analyze the main contradictions and the main aspects of things.	1	2	3	4	5	6	7
k	I can analyze and choose the appropriate solution to the problem according to the specific situation of the problem	1	2	3	4	5	6	7
l	I can choose the right time to solve the problem according to the specific situation of the problem.	1	2	3	4	5	6	7
m	I can use management knowledge and tools to provide solutions to the management leaders	1	2	3	4	5	6	7
n	I am familiar with the operation and work of the higher authorities and governments.	1	2	3	4	5	6	7
o	I am familiar with the business processes and characteristics of clinical work	1	2	3	4	5	6	7
p	I study policy documents and superior requirements carefully, and do not make fundamental mistakes	1	2	3	4	5	6	7

4. Experience feeling

Based on your personal experience and real feelings, circle a number to indicate your

consent to each of the following statements (1 is strongly disagree and 7 is strongly agree). There are no objective answers or criteria for answering these questions. Please answer based on your own experience.

		Strongly Disagree						Strongly Agree
a	I'm happy with the nature of my current job.	1	2	3	4	5	6	7
b	I'm happy with my current salary.	1	2	3	4	5	6	7
c	I'm happy with my medical professional ability.	1	2	3	4	5	6	7
d	I'm happy with my professional management skills.	1	2	3	4	5	6	7
e	I am satisfied with my future professional management development goals.	1	2	3	4	5	6	7
f	I'm happy with my future medical development goals.	1	2	3	4	5	6	7
g	I'm happy with my opportunity to improve my professional management skills.	1	2	3	4	5	6	7
h	I'm happy with my opportunity to improve my medical professional.	1	2	3	4	5	6	7
i	Being an executive can fulfill all the wishes of a doctor	1	2	3	4	5	6	7
j	Being an executive can help doctors fulfill their wishes.	1	2	3	4	5	6	7
k	Hospital business revenue went up a lot compared to when I took office	1	2	3	4	5	6	7
l	Hospital patient traffic has increased a lot compared to when I took office.	1	2	3	4	5	6	7
m	Hospital staff are more satisfied with hospitals than when I took office	1	2	3	4	5	6	7
n	Patients are more satisfied with hospital services than when I took office	1	2	3	4	5	6	7
o	Compared with when I took office, the higher authorities were satisfied with the development situation.	1	2	3	4	5	6	7
p	Compared with my peers, I am satisfied with the speed of our hospital’s development.	1	2	3	4	5	6	7

5. Hospital and your background information

To help analyze the impact of different hospital environments and leadership personal characteristics on the core variables of this study, please provide the following hospital and personal background information. All information will be kept strictly confidential and will only be used for research purposes.

5.1 Hospital Background Information

a. The full name of the hospital:
b. What year the hospital was established:
c. Hospital level (please √ to pick one): □Grade III A, □Grade III B, □Grade II A, □Grade II B, □other (please note) . . . . . .
d. Hospital location (province, city, district/county):
e. Hospital Category: □Teaching Hospital, □Non-Teaching Hospital
f. Hospital Type: □General, □Specialist.
g. Hospital Nature: □Public, □Non-Public
h. Hospital affiliates: □University-affiliated hospitals, □independent hospitals, □other (please mark)
i. Number of employees: . . . . . .
j. Number of doctors: . . . . . .
k. Number of nurses: . . . . . .
l. Number of beds in hospital: . . . . . .
m. Annual outpatient visits: . . . . . .
n. Annual discharges: . . . .

5.2. Personal background information

a. Gender: □male, □female
b. Age: years old
c. Administrative positions: □Party Secretary, □Executive, □Deputy Secretary of the Party Committee, □Vice-President, □Chief Accountant
☐Assistant executive (please mark):
d. Number of years in this position:
e. The number of years you have worked in this hospital:
f. Your title is: □Seniors □Deputy Senior □Intermediate □Junior
g. Your area of expertise: □internal medicine, □surgery, □medical technology, □nursing, □other (please mark):
h. First degree: □Secondary school, □college, □university (undergraduate)
i. First degree majored in: □clinical medicine, □medical technology, □nursing, □public health, □management, □economy
□Social science, □others (please mark):
j. Highest degree: □Secondary schools □colleges □universities (undergraduates), □master's degrees, □doctoral students
k. Highest degree majored in: □clinical medicine, □medical technology, □nursing, □public

health, □management, □economy □social science, □the other (please mark it)

l. Management degree (multiple options): □Bachelor's Degree in Hospital □Management (MH A) MBA □Master of Business Administration (EMBA) Ph.D. ☐DBA

m. What year did you start your first job?

n. When did you start working in management?

o. Based on your own work schedule and time, approximately how much time per week do you spend on hospital management work

p. Based on your own work schedule and time, approximately how much time is spent on working in the medical profession every week

q. What is the number of clinical graduate students you currently teach? (If not filled in 0): Ph.D.

r. How many short-term management trainings (training and study time within 1 month) have you attended in the last three years?

s. How many long-term management trainings (training and study time of more than 1 month) have you attended in the last three years?

t. The percentage of the main sources of management knowledge and skills you currently have is approximately:

Work experience . . . . . _____%

Education (including undergraduate, MBA, EMBA, DBA) ... _____%

Short-term/long-term job training or special lectures ... ... _____%

Training or study abroad ... ... _____%

Other (please specify the source):

u. The percentage of executive's career management training you have attended is approximately:

Traditional classroom lectures . . . . . _____%

Classroom case scenario (role-playing) ... ... _____%

Action training (simulation training) ... ... _____%

Distance course teaching ... ... _____%

Online self-learning ... ... _____%

Other (please write down the training method): _____

Please leave your contact details so that we can (1) send you an upgraded version of the Variable Speed Leadership - Manager Leadership Guidance Manual, published in June 2019.

Mobile phone:

WeChat ID:

Research Group Contact Information: Yang Xia; 13816377107.

Thank you for your support and help!

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Annex C: Tables Related to Measures

Table C.1 Chinese Hospital Management Department and Scope

Superior Department	Scope of the Management
Superior Health Management Department	Health Policy Enactment
Health Monitoring Institute	Quality of care
Medical Insurance Bureau	Social health insurance payments
University	Appointment and removal of cadres
Hospital Association	Responsible for hospital review
Hospital Authority	Budget, Financial and Fixed Assets Transfer
Development & Reform Commission	Responsible for the price of medical services
Higher Party Committee Organization Department	Appointment and removal of cadres

Table C.2 Measures of Professional Management Competence

Dimensions	Number	Questions	Source
planning ability	a	I can develop long-term development plans based on the hospital's vision.	Man et al. (2002); He and Li (2005); Kearns and Sabherwal (2007)
	b	I am concerned about the impact of changes in the internal and external environment on the hospital strategy.	Man et al. (2002); He and Li (2005); Kearns and Sabherwal (2007)
	c	I develop a specific annual work plan according to the hospital's strategic objectives	Man et al. (2002); He and Li (2005); Kearns and Sabherwal (2007)
control ability	d	I monitor schedule progress with performance goals as the priority	Eisenhardt and Martin (2000); Schein (2010); Wu et al. (2010)
	e	I use program management tools to monitor program progress regularly	Eisenhardt and Martin (2000); Schein (2010); Wu et al. (2010)
	f	I can constantly adjust the hospital strategic plan according to the changes in the environment inside and outside the hospital.	Eisenhardt and Martin (2000); Schein (2010); Wu et al. (2010)
problem solving ability	g	At work I can distinguish the main, grasp the key issues	Bateman and Crant (1993); Seibert et al. (1999); Yang (2007); Li et al. (2014); Mainemelis et al. (2015)

	h	I can analyze the main contradictions and the main aspects of things.	Bateman and Crant (1993); Seibert et al. (1999); Yang (2007); Li et al. (2014); Mainemelis et al. (2015)
	i	I can analyze and choose the appropriate solution to the problem according to the specific situation of the problem	Bateman and Crant (1993); Seibert et al. (1999); Yang (2007); Li et al. (2014); Mainemelis et al. (2015)
	j	I can choose the right time to solve the problem according to the specific situation of the problem.	Bateman and Crant (1993); Seibert et al. (1999); Yang (2007); Li et al. (2014); Mainemelis et al. (2015)

Table C.3 Measures of Role Pressure

Dimensions	Number	Questions	Source
role conflict	a	Different superiors put forward different mission goals for the hospital that are difficult to complete at the same time, which put me in dilemma	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	b	Relevant policies of higher authorities are contradictory in time, which cause me difficulties	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	c	Superior's policies are inconsistent with objectives	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	d	There is a contradiction between the hospital's own development and the performance goals of superiors	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
role ambiguity	e	I think the parent department's definition of my job responsibilities is very vague.	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	f	I feel like my role as executive is vague.	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	g	I'm not sure how my supervisor evaluates my performance.	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
role overload	h	I often have to continue work during off hours	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005);

			Ren (2009); Kanbur and Canbek (2017)
	i	A lot of work has nothing to do with hospital development, but I have to attend in person.	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	j	I can't guarantee to eat on time because of work.	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	k	I can't take time off because of my work.	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
role gap	l	I lack the management knowledge and skills to do my job effectively	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	m	My superiors expect more than I can.	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	n	The expectations of the employees exceed my abilities	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)
	o	The speed and level of peer development are beyond my ability	Rizzo and Lirtzman (1970); Siegall (2000); Li & Shi (2005); Ren (2009); Kanbur and Canbek (2017)

Table C.4 Measures of Job Satisfaction

Dimensions	Number	Questions	Source
Career satisfaction	a	I'm happy with the nature of my current job.	Moorman (1993); Spector (1997); Intaraprasong et al. (2012)
	b	I'm happy with my current salary.	Moorman (1993); Spector (1997); Intaraprasong et al. (2012)
Personal growth	c	I'm happy with my future medical development goals.	Moorman (1993); Spector (1997); Intaraprasong et al. (2012)
	d	I'm happy with my opportunity to improve my professional management skills.	Moorman (1993); Spector (1997); Intaraprasong et al. (2012)
	e	I'm happy with my opportunity to improve my medical professional.	Moorman (1993); Spector (1997); Intaraprasong et al. (2012)

Table C.3 Measures of Organization performance

Number	Questions	Source
a	Hospital business revenue went up a lot compared to when I took office	Covin and Slevin (1991); Jia et al. (2013)
b	Hospital patient traffic has increased a lot compared to when I took office.	Covin and Slevin (1991); Jia et al. (2013)
c	Hospital staff are more satisfied with hospitals than when I took office	Covin and Slevin (1991); Jia et al. (2013)
d	Patients are more satisfied with hospital services than when I took office	Covin and Slevin (1991); Jia et al. (2013)
e	The higher authorities are more satisfied with the development situation than when I took office.	Covin and Slevin (1991); Jia et al. (2013)

Table C.4 Measures of Training

Number	Questions	Source
a	Too much theoretical content of training, little introduction of practical tools	Aragón-Sánchez et al (2003), Tharenou et al (2007)
b	Content is too broad; the position is not targeted	Aragón-Sánchez et al (2003), Tharenou et al (2007)
c	There are fewer cases from the medical service industry, and the relevance is not strong	Aragón-Sánchez et al (2003), Tharenou et al (2007)
d	Training content is not systematic	Aragón-Sánchez et al (2003), Tharenou et al (2007)
e	Tools will not be applied without follow-up training coaching	Aragón-Sánchez et al (2003), Tharenou et al (2007)

Table C. 5 Measures of Policy Uncertainty

Dimensions	Number	Questions	Source
policy uncertainty	a	I'm not very clear about the policy implications of the executive's responsibility under the leadership of the Party Committee	Interview
	b	I'm not very clear about the impact of the cancellation of the drug and consumable markups on the operation of the hospital	Interview
	c	I'm not very clear about the path of the Modern Hospital Management System.	Interview
	d	I'm not very clear about the impact of graded care on hospital operations.	Interview
	e	I'm not very sure how to deal with commercial bribery in hospitals.	Interview

Table C.8 Measures of Leadership

Dimensions	Number	Questions	Source of literature
leadership vision	a	I'm going to paint a picture of the future of the hospital.	Bass (1998); Li & Shi (2005); Wei et al. (2016)
	b	I can make employees understand the values and mission of the hospital.	Bass (1998); Li & Shi (2005); Wei et al. (2016)
	c	I can keep employees informed about the hospital's development goals.	Bass (1998); Li & Shi (2005); Wei et al. (2016)
	d	I'll explain to employees what they're doing.	Bass (1998); Li & Shi (2005); Wei et al. (2016)
	e	I patiently teach the staff, answer questions for the staff	Bass (1998); Li & Shi (2005); Wei et al. (2016)
leadership care	f	I will consider the personal difficulties and requirements of the employee when I arrange my work	Bass (1998); Li & Shi (2005); Wei et al. (2016)
	g	I can always listen to employees' suggestions and opinions	Bass (1998); Li & Shi (2005); Wei et al. (2016)
	h	I care about the work, life and growth of my employees and sincerely advise them on their development.	Bass (1998); Li & Shi (2005); Wei et al. (2016)
	i	I focus on creating opportunities and conditions where employees can develop their strengths	Bass (1998); Li & Shi (2005); Wei et al. (2016)

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Annex D: Tables of Regression Analysis

Table d.1 Regression: dependent variable(Y_1)– Professional management competence

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.662	0.247		6.722	0
	Training	0.015	0.025	0.021	0.573	0.567
	Policy Uncertainty	-0.092	0.025	-0.135	-3.736	0
	Leadership	0.725	0.036	0.731	20.232	0

a. Dependent Variable(Y1): Professional Management Competence

Table d.2 Regression: dependent variable(Y_2) – Role pressure

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.866	0.345		5.404	0
	Training	0.276	0.035	0.361	7.811	0
	Policy Uncertainty	0.289	0.034	0.391	8.412	0
	Leadership	-0.003	0.05	-0.003	-0.066	0.947

a. Dependent Variable(Y_2):Role Pressure

Table d.3 Regression: dependent variable(Y_3) – Job satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.523	0.403		8.74	0
	Professional Management Competence	0.389	0.056	0.342	6.941	0
	Role Pressure	-0.242	0.052	-0.231	-4.683	0

a. Dependent Variable(Y3): Job Satisfaction

Table d.4 Regression: dependent variable(Y_4) – Organization performance

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.275	0.361		3.536	0
	Professional Management Competence	0.742	0.05	0.629	14.795	0
	Role Pressure	0.007	0.046	0.007	0.162	0.871

a. Dependent Variable(Y4): Organization Performance

Table d.5 Regression: dependent variable(Y_5) – planning ability

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.728	0.298		5.795	0
	Training	0.041	0.031	0.052	1.324	0.186
	Policy Uncertainty	-0.109	0.03	-0.144	-3.685	0
	Leadership Vision	0.538	0.055	0.538	9.807	0
	Leadership Care	0.186	0.057	0.177	3.274	0.001

a. Dependent Variable(Y5): Planning Ability

Table d.6 Regression: dependent variable(Y_6)- control ability

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.38	0.36		3.839	0
	Training	0.001	0.037	0.002	0.035	0.972
	Policy Uncertainty	-0.074	0.036	-0.091	-2.064	0.04
	Leadership Vision	0.323	0.066	0.301	4.884	0
	Leadership Care	0.402	0.068	0.358	5.881	0

a. Dependent Variable(Y6): Control Ability

Table d.7 Regression: dependent variable(Y_7) - problem solving ability

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.855	0.27		6.865	0
	Training	0.003	0.028	0.004	0.104	0.917
	Policy Uncertainty	-0.085	0.027	-0.122	-3.178	0.002
	Leadership Vision	0.308	0.05	0.332	6.194	0
	Leadership Care	0.418	0.051	0.431	8.139	0

a. Dependent Variable(Y7): Problem Solving Ability

Table d.8 Regression: dependent variable(Y_8) – role conflict

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.626	0.517		3.147	0.002
	Training	0.227	0.053	0.225	4.275	0
	Policy Uncertainty	0.229	0.051	0.235	4.45	0
	Leadership Vision	0.027	0.095	0.021	0.286	0.775
	Leadership Care	0.144	0.098	0.107	1.463	0.144

a. Dependent Variable(Y8): Role Conflict

Table d.9 Regression: dependent variable(Y_9) - role ambiguity

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.764	0.48		1.591	0.112
	Training	0.322	0.049	0.298	6.522	0
	Policy Uncertainty	0.476	0.048	0.457	9.969	0
	Leadership Vision	-0.179	0.088	-0.13	-2.024	0.044
	Leadership Care	0.124	0.091	0.086	1.354	0.177

a. Dependent Variable(Y9): Role Ambiguity

Table d.10 Regression: dependent variable(Y10) - role overload

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.418	0.572		4.23	0
	Training	0.364	0.059	0.327	6.21	0
	Policy Uncertainty	0.051	0.057	0.048	0.902	0.368
	Leadership Vision	0.186	0.105	0.131	1.768	0.078
	Leadership Care	-0.081	0.109	-0.055	-0.746	0.456

a. Dependent Variable(Y10): Role Overload

Table d.11 Regression: dependent variable(Y_{11}) - role gap

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.623	0.524		5.006	0
	Training	0.2	0.054	0.184	3.712	0
	Policy Uncertainty	0.394	0.052	0.375	7.556	0
	Leadership Vision	-0.257	0.096	-0.185	-2.665	0.008
	Leadership Care	0.031	0.1	0.021	0.308	0.759

a. Dependent Variable(Y11): Role Gap

Table d.12 Regression: dependent variable(Y_{12}) - career satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.271	0.534		8.004	0
	Planning Ability	0.105	0.103	0.085	1.016	0.31
	Control Ability	0.135	0.091	0.117	1.485	0.138
	Problem Solving Ability	0.054	0.11	0.041	0.49	0.625
	Role Conflict	-0.11	0.055	-0.114	-1.988	0.048
	Role Ambiguity	-0.095	0.058	-0.106	-1.654	0.099
	Role Overload	-0.053	0.05	-0.06	-1.056	0.292
	Role Gap	-0.055	0.057	-0.062	-0.981	0.327

a. Dependent Variable(Y12): Career Satisfaction

Table d.13 Regression: dependent variable(Y_{13})- personal growth

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.004	0.497		6.046	0
	Planning Ability	0.021	0.096	0.017	0.216	0.829
	Control Ability	0.309	0.084	0.278	3.658	0
	Problem Solving Ability	0.134	0.103	0.104	1.302	0.194
	Role Conflict	-0.061	0.051	-0.065	-1.179	0.239
	Role Ambiguity	-0.031	0.054	-0.035	-0.574	0.567
	Role Overload	-0.017	0.046	-0.02	-0.366	0.715
	Role Gap	-0.081	0.053	-0.094	-1.539	0.125

a. Dependent Variable(Y13): Personal Growth

Table d. 14 Regression: dependent variable(Y_{14}) - organization performance

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.355	0.362		3.741	0
	Planning Ability	0.372	0.07	0.351	5.314	0
	Control Ability	0.089	0.062	0.09	1.448	0.148
	Problem Solving Ability	0.219	0.075	0.192	2.917	0.004
	Role Conflict	0.04	0.038	0.049	1.067	0.287
	Role Ambiguity	0.023	0.039	0.03	0.594	0.553
	Role Overload	0.098	0.034	0.131	2.908	0.004
	Role Gap	-0.151	0.039	-0.198	-3.918	0

a. Dependent Variable(Y14): Organization performance