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The Impact of Paternalistic Leadership on Innovation and Performance in Chinese Public Hospitals

TAN Zhiying

Thesis submitted as partial requirement for the conferral of the degree of

Doctor of Management

Supervisor:

Professor Silvia Silva, Associate Professor,

ISCTE - University Institute of Lisbon

May, 2017

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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.

Signed: 谭智颖 Date: May 5th, 2017

Name: Tan Zhiying

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Abstract

Chinese public hospitals have their unique characteristics. CEOs of Chinese public hospitals face multiple difficulties and challenges, which influence the performance of public hospitals. Leadership is an essential variable to organizational effectiveness. Based on the Chinese culture context, paternalistic leadership featuring authoritarianism, benevolence, and moral leadership, is one of the popular leadership theories in Chinese businesses. Furthermore, innovation is an important contribution to organizational performance. The purpose of this study is to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. The sample includes 103 CEOs from public hospitals in 11 Chinese provinces and the data collected using a survey. The research found that paternalistic leadership and innovation did not have significant positive impact on hospital performance. Paternalistic leadership had significant positive impact on innovation. Additionally, paternalistic leadership did not moderate the relationship between innovation and performance. Distinguishing the three elements of paternalistic leadership, moral leadership had the expected positive effects. Moral leadership was positively and significantly related to innovation and internal business processes of performance. Moreover, moral leadership and innovation were both negatively related to the financial performance and innovation is positively related to the learning and growth of performance. Overall, moral leadership of paternalistic leadership had the greatest impact for the public hospital CEOs. Therefore, these results emphasized the importance of moral leadership in Chinese public hospitals. This study has some limitations due to the use of only one questionnaire and the sample size in the study. Future studies may examine the relationship between paternalistic leadership, innovation and performance in other contexts.

Keywords: Public hospital, paternalistic leadership, innovation, performance

JEL Code: D23, L25

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Resumo

Os hospistais públicos chineses têm características únicas. Os CEOs dos hospitais públicos chineses enfrentam múltiplas dificuldades e desafios que influenciam o desempenho dos hospitais. A Liderança é uma variável essencial para a eficácia organizacional. Tendo em consideração a cultura chinesa a liderança paternalista, consistindo no autoritarismo, benevolência e liderança moral, é uma das teorias de liderança mais populares nas empresas chinesas. Simultaneamente, a inovação constitui um contributo importante para o desempenho organizacional. O objetivo do presente estudo é analisar a relação entre a liderança paternalista, a inovação e o desempenho em hospitais públicos chineses. A amosta inclui 103 CEOs de hospitais públicos pertencentes a 11 províncias na China e os dados foram recolhidos utilizando um questionário. Os resultados revelam que a liderança paternalista e a inovação não têm um impacto positivo significativo no desempenho dos hospitais. Verificou-se ainda que a liderança paternalista tem um impacto positivo significativo na inovação. Adicionalmente, verificou-se que a liderança paternalista não modera a relação entre a inovação e o desempenho. Distinguindo as três dimensões da liderança paternalista é de referir que a liderança moral teve os efeitos positivos esperados. A liderança moral está relacionada positivamente e significativamente com a inovação e com os processos internos de desempenho. Além disso, verificou-se que a liderança moral e a inovação estão negativamente relacionadas com o desempenho financeiro e que a inovação está positivamente relacionada com o desempenho em termos de aprendizagem e crescimento. Globalmente a liderança moral foi a que teve um impacto maior para esta amostra de CEOs. Deste modo, estes resultados realçam a importância da liderança moral nos hospitais públicos chineses. Este estudo tem limitações devido ao facto da recolha de dados ter sido realizada utilizando apenas um questionário e devido à dimensão da amostra. Estudos futuros podem analisar a relação entre a liderança paternalista,

inovação e desempenho noutros contextos.

Palavras Chave: Hospital público, liderança paternalista, inovação, desempenho
JEL Code: D23, L25

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Chapter 1 - Introduction

The introduction describes the outline of the study. This chapter presents Research background, Research questions, Purpose of the study, Overview of the literature, Research methods, Limitations of the study, Structure of the study, and the summary of the chapter.

1.1 Research background

The purpose of our study is based on the research background. Therefore, we need to introduce our research background in the first section. This section includes the introduction of Chinese public hospitals, CEOs of Chinese public hospitals, problems and challenges of Chinese public hospitals.

1.1.1 Introduction of Chinese public hospitals

There are various types of medical institutions in China. Based on *The Rules for the Implementation of the Regulations on the Administration of Medical Institutions* promulgated by the Ministry of Health of the People's Republic of China, the medical institutions in China are divided into 12 categories (Luo, 2010, p.3):

(a) General hospitals, hospitals of traditional Chinese medicine, integrated traditional Chinese and western medicine hospitals, national medical hospitals, special hospitals, rehabilitation hospitals;

(b) Maternal and child health hospitals;

(c) Central hospitals, township hospitals, district hospitals;

(d) Convalescent hospitals;

(e) Comprehensive outpatient departments, specialist outpatient departments, departments of traditional Chinese medicine, integrated Chinese and western medicine departments, national medicine departments;

(f) Clinics, Chinese medicine clinics, national health clinics, health clinics, infirmaries, health care centers, and health stations;

(g) Village health rooms;

(h) Emergency centers, emergency stations;

(i) Clinical laboratory centers;

(j) Academies of disease prevention and control, disease prevention and treatment institutes, disease prevention and treatment stations;

(k) Nursing homes, nursing stations;

(l) Other medical institutions.

The present study focuses on the CEOs working in public hospitals. Public hospitals are hospitals whose assets belong to the state and the government. They are built to provide public services to people, not for profit. Chinese public hospitals are unique in terms of their types, various sizes and different property rights (Luo, 2010). Public hospitals in China belong to the different levels of the government, the universities, and the army (Zhao, 2011). Luo (2010) identifies five levels of the government in China, including the central, provincial, municipal, county, and township governments. These five levels of the government have their public hospitals, which form a large public hospital network, and provide basic medical services. On the other hand, some universities use their resources to build up their hospitals, which include abundant medical talents, medical technology, and demand for scientific research. The army has their own hospitals, which also partly supply their services to the society. Besides the above three major kinds of Chinese public hospitals, there are some public-private-partnership hospitals.

China’s modern history is a history of war and civil strife. The civil war between Communists and Nationalists changed the situations in 1949. Chinese Communist Party founded the People’s Republic of China in mainland in 1949 and Nationalists retreated to the island of Taiwan in the same year, and the status continues till today. From 1949 to 1979, all hospitals of China mainland were only public. In 1980, Chinese government permitted individual doctors to practice medicine. This is a landmark event in the development of private hospitals in Mainland China.

Based on their functions and tasks, Chinese public hospitals were divided into three levels in1989, but the hospital accreditation was stopped in 1998. However, at present, the public hospitals in China are still categorized according to the three levels. In the three levels, First-level hospitals are grass-root hospitals providing prevention, medical treatment, health care and rehabilitation services to a certain population of the community. Second-level hospitals are regional hospitals providing comprehensive medical and health services to a number of communities and undertaking teaching and scientific research. Third-level hospitals are regional hospitals providing a high level of specialized medical and health services in more areas and greater numbers, as well as scientific research tasks. From 1989 to 1998, there were 558 third-level hospitals, 3,100 second-level hospitals, and 14,050 first-level hospitals (Luo, 2010, p.5-6).

The National Health and Family Planning Commission announced the number of medical and health institutions in 2015 (www.nhfpc.gov.cn). By the end of September, 2015, the total number of medical and health institutions had been 990,000, including 27,000 hospitals, 925,000 primary health care institutions, 35,000 professional public health institutions, and 3,000 other institutions. There were 13,304 public hospitals, and 13,600 private hospitals. Among the 925,000 primary health care institutions, there were 35,000 Community Health Service Centers (station), 37,000 township health centers, 646,000 village clinics and 194,000 clinics (medical room).

Moreover, from January to September in 2015, the total visits to the national medical and health institutions are 5.68 billion according to the data of diagnosis, including 2.25 billion visits to hospitals, 3.24 billion visits to primary medical and health institutions, 0.19 billion visits to other medical institutions. Among the 2.25 billion visits to hospitals, there were 2.01 billion visits to public hospitals and 0.25 billion visits to private hospitals. As for primary medical and health institutions, there were 0.5 billion visits to community health service centers (stations), 0.74 billion visits to township health centers and 1.5 billion visits to village clinics (www.nhfpc.gov.cn).

1.1.2 CEOs of Chinese public hospitals

In China, public hospitals belong to three main bodies, including the different local levels of government, the universities, and the army. It means that not only the different local levels of government have their hospitals, but also the universities and the army. But the different local levels of government have the biggest number of hospitals in the three main bodies. On the other hand, these public hospitals are also responsible for the different administration departments of the government. In fact, the majority of public hospitals are under the dual leadership of and different department (Zhao, 2011). Furthermore, the public hospitals of China are in a special political environment, that is, managers are led by the Communist Party of China. These factors cause the complex procedure to employ CEOs of Chinese public hospitals. And which department of the government should be mainly responsible to employ the CEOs.

CEO is responsible for the running of public hospitals. The property right and the responsibility of Chinese public hospitals belong to the government. The CEO of the public hospital is only a representative of the investors to manage the assets and provide medical services. Therefore, the hospital CEO appears in multiple roles, including the manager appointed by the government, the hospital representative of state-owned assets, and the legal representative of the mechanism (Yi, 2006). The employees are also administrated by the government. CEO cannot arbitrarily dismiss their employees. Based on this situation, there are two obvious characteristics of public hospitals' CEOs: Firstly, the public hospitals' CEOs are appointed by the government; secondly, CEOs do not have the full right of finance and human resource management. It means that they do not need to be completely responsible for finance and human resource results. In other words, CEOs also do not need to be responsible for the final results of their hospital operation. This is absolutely different from CEOs of the private hospitals.

At present, over 90% of the managers of Chinese public hospitals, including CEOs, are medical experts. They are in charge of the daily operation of the hospital.

But they lack managerial knowledge and skills, such as finance, human resource management and leadership. On the other hand, most hospital managers are responsible for not only administrative work, but also clinical work. 98% of CEOs and vice CEOs still spend over 50% of working time regularly providing clinical medical care in outpatient, operation, or make the rounds of the wards (Zhao, 2011).

1.1.3 The problems and challenges of Chinese public hospitals

China began the economic reform from planned economy to market economy in 1978. With economic growth, urbanization, population aging, disease generalization and ecological environment changes, the demand for the medical and health service is growing. At present, some problems are obvious, such as inadequate investment in health care, shortage of high-quality resources, unreasonable allocation of medical resources, and heavy burden of medical spending. Moreover, according to the data provided by the Ministry of Health, 80% of the country's medical resources are concentrated in large cities, 30% of which are concentrated in large hospitals. Patients are only willing to go to the large hospitals. This phenomenon not only causes the waste of high quality medical resources, but also causes the functions of the second-level hospitals and community hospitals to fail to play their role in providing treatment of the common diseases and chronic diseases. On the contrary, patients rarely go to the grassroots community hospitals.

The health care reform also began after the economic reform. Although it has been in operation for over 30 years, the managers of public hospitals still face multiple difficulties and challenges. Some scholars summarized the difficulties and challenges of Chinese public hospitals in their studies. For instance, Yi (2006) described the serious system and management malpractice of Chinese public hospital with the development of economic system reform becoming more and more serious, such as different administrations of medical services, the hospital CEOs of the random selection system, the serious insufficiencies of investment, the imperfect medical system, physician motivation, and the relationships between doctors and patients; at the level of competition, the public hospitals have the

potential survival pressure from the sole proprietorship, joint venture, and private hospitals. Moreover, Zhao (2011) summarized nine major categories of difficulties and challenges of Chinese public hospitals (p. 34-35):

(1) Property right of public hospitals not playing its due role

There is a lack of direct management by the board of directors or similar institutions in public hospitals. The government not only owns public hospitals, but also holds the major personnel decisions, the major investment decisions, and the decision right of major projects in the development of public hospitals, which almost equal to the master of the lifeblood of the hospital development and management. However, in the government, no any members should be responsible for the results of the hospital operation.

(2) Non-profit hospital in accordance with the operation of for-profit hospitals

The surplus of non-profit hospital business income can be only invested for further development of the hospital, not as any forms of dividends or bonuses to executives and staff. Currently in public hospitals of China, the system of wage setting is lagging behind, and not consistent with the environmental change of speed and the situation. The wage scale needs to serve as a supplement to the various names of fixed or floating income. Public hospitals need to use medical services revenue to ensure the rapid growth of the daily operation and labor costs, equipment investment and even part of the social assistance function. Currently, about 90% of the hospital systems in China are public hospitals. According to the mode of their operation, about 97% of the public hospitals can be defined as for-profit hospitals.

(3) The government's excessive investment or insufficient investment

There is no standard for the investment amount to public hospitals. Some hospitals are supported by large grants and projects, and even if the hospital's own financial resources can ensure the project, it is still subsidized by the government, such as in the construction of information management system and investment. In contrast, some hospitals urgently need financial support, but they can't get it timely

because of various reasons.

(4) Pricing of medical services

The administrative department and the price department of the government unify the prices of the hospital medical services. To a certain extent, although this policy keeps the prices relatively fair and stable, it does not easily reflect the value differences between the level of knowledge and medical technology, and can't fully meet the demand of the development of today's hospitals. In addition, the medical service prices are too low to cause the medicine and inspection costs increase.

(5) The perfection of social security system

Due to the weak social security system and the lack of social charity, poor people cannot afford the heavy medical spending. Their arrears often require hospitals to undertake. The hospitals also need to pay the wages and benefits of their own retirees. In addition, the government holds the human resources decision-making power of the public hospitals. Normally the hospitals cannot dismiss employees without hospital business personnel. This objectively aggravates the burden on hospital human resources and makes hospital inefficiency even worse. The hospitals bear some of the responsibilities of the social security system.

(6) Doctor-patient relationship

Conflicts between doctors and patients frequently focus on the outbreak in a country. In addition to the management of the hospitals, the inharmonious factors in the social development process are transferred to the field of medical services to aggravate the doctor-patient relationship.

(7) System setting of external management and internal management of hospital

The public hospitals belong to different types of systems, such as the different levels of the governments and the universities or colleges; all kinds of regulations and management methods are not exactly the same. To a certain extent, these factors cause the formation of the "vacuum zone" or double management. The hospitals are

managed by experts of pure medical background and lacking relevant knowledge to justify their operation and decision making. For instance, managers and CEO are medical experts. But they lack the education of the managerial knowledge and skills.

(8) Human resource management system

The human resource management system of public hospitals has been used for half a century and is currently unable to meet the needs of Chinese hospital management. For example, government departments in charge of the hospitals determine the size of the hospital staff and define the current wage hierarchy and relatively fixed personnel "in and out" system according to their title and working life and other conditions. Especially the low wage system of medical staff is seriously out of line with the development needs of modern hospitals.

(9) The influence of government policy

The strategic development of the hospital is largely dominated by the government, especially in terms of policy. On the one hand, all levels of the governments fail to create the environment in which the hospitals is able to operate in the same manner as non-profit organization with regard to the compensation mechanism of public hospitals; on the other hand, they emphasize that hospitals are non-profit. Under the "squeeze" of the dual objectives and inconsistency, public hospitals appear many kinds of inharmonious in social performance and social image.

In general, Chinese hospitals are facing three major problems in the system, environment, and management (Yi, 2006). The above descriptions present the difficulties and challenges of Chinese public hospitals. These difficulties and challenges influence the performance of public hospitals. Furthermore, performance influences organizational survival and development. In the influential factors of organizational performance, the leader is viewed as a major determinant. Leaders may play a pivotal role in organizational operation and their leadership behavior is critical to organizational survival and development. Leadership is viewed as one of the key driving forces to improve a firm's performance. Effective leadership is seen as a potent source of management development and sustained competitive advantage for

organizational performance improvement (Obiwuru et al., 2011). Based on the Chinese culture, paternalistic leadership is popular in Chinese enterprises. Moreover, the research conducted about Chinese leadership has also focused on this type of leadership. On the other hand, innovation has become one of the main strategies that organizations use to achieve competitive advantage and increase organizational performance (Lee et al., 2011; Ruiz-Jiménez & Fuentes-Fuentes, 2013). Innovation is a critical element for hospitals to improve their performance. Hospitals' successes depend on their performance. Therefore, we focus on the relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals. However, few studies are conducted to evaluate the relationship between paternalistic leadership of CEOs, innovation, and hospital performance, and collect samples from Chinese public hospitals. We could even say there is a lack of such studies. This is also the research problem for our study. Thus, a knowledge gap appears here:

There is a lack of evaluation of the relationship between paternalistic leadership of CEOs, innovation, and performance in Chinese public hospitals.

1.2 Research questions

Based on the discussions on relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals, the questions are presented as follows:

Q1: What is the relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals?

Q2: Does paternalistic leadership positively moderate the relationship between innovation and performance?

Q3: Which factor of paternalistic leadership has the greatest effect on the hospital CEOs?

1.3 Purpose of the study

The purpose of the present study is to explore the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. The study also attempts to help CEOs of Chinese public hospitals to develop the purposed requirements of their leadership competences.

1.4 Overview of the literature

Leadership is an attractive research field. The definitions of leadership have been discussed in the previous studies. Leadership competence or personal ability influence organizational performance. Paternalistic leadership is developed in Chinese culture, and is popular in Chinese enterprises. Hence, paternalistic leadership will be the focus of our study. The prior studies showed that leadership style behavior contribute to the development of innovation capabilities. On the other hand, innovation has also been defined as an essential contribution to organizational performance. Leadership styles also influence the organizational performance. The relationships between paternalistic leadership, innovation, and performance have been explored in the previous studies. Based on their relationships, the research model and hypotheses of the study are proposed.

1.5 Research methods

Quantitative study was adopted in the present study. The public hospitals as the samples of the study were from China mainland. The assessment tool of the study was paternalistic leadership measurement, innovation measurement, and performance measurement. The data analysis methods of the present study were reliability test, factor analysis, and regression analysis to test the hypotheses. We used the Windows version 22.0 SPSS (Statistical Product and Service Solutions) as our statistical analysis tool.

1.6 Limitations of the study

In terms of the questionnaire, there are some limitations of paternalistic leadership measurement, innovation measurement, and performance measurement. On the other hand, we also have some limitations of the samples, such as hospital category, hospital location, and hospital size.

1.7 Structure of the study

There are six chapters in the present study. The chapters include Introduction, Literature review, Research methods, Results, Discussions, and Conclusions.

1.8 Summary

The research background is a critical factor for the research purpose. The research background of our study includes the introduction of Chinese public hospitals, CEOs of Chinese public hospitals, and the problems and challenges of Chinese public hospitals. Based on the discussions on the relationship between paternalistic leadership, innovation, and performance, there are three research questions. The purpose of the present study is to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. The literature presented the discussions on leadership, innovation, performance, and their relationships. In the research methods, quantitative study was adopted in the present study. Some limitations of the study were mentioned. The structure introduced the outline of the study.

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Chapter 2 - Literature review

This chapter presents the theories of leadership, innovation, and performance measures. The discussions show the relationship between leadership style, innovation, and performance. The research model, questions, and hypotheses of the present study are presented.

2.1 Leadership

This section includes review of leadership theories and leadership style.

2.1.1 Review of leadership theories

The review of leadership theories includes the definitions of leadership, and the development of leadership theories.

(1) Definitions of leadership

The concept of leadership has generated lively interest, debate and occasional confusion. But leadership is a complex subject and not easy to be defined. Hence, there is no general consensus about delimitation of the field of analysis (Franco & Almeida, 2011). Leadership occurs when member modifies the motivation or competencies of others in the group (Bass, 1990). The concept of leadership has been defined from various viewpoints for years. And some points have been redefined in the development of leadership theories. However, no matter how to define the content of leadership, Bennis (2009) states that leadership should have three basic ingredients. The first ingredient is to guide vision-professionally and personally. The leader has a clear idea of what they want. The second ingredient is passion. The leader loves what they are doing and is enthusiastic about it. The third ingredient is integrity. The essential parts are: self-knowledge, candor, and maturity.

The components of leadership definitions have been identified in terms of the position, personality, responsibility, influence process, instrument to achieve a goal, behavior, result from interaction and given some other meanings (Limsila & Ogunlana, 2008). Generally, leadership has been defined as one to more components. Among the studies defining leadership as one component, Grint (2010) identifies the simplest definition of leadership as 'having followers', because it is the base for the measurement of leadership. Certainly, whether a leader has followers is an indicator of his/her competence. Hence, leadership also presents the result of a leader's ability. Drucker (2001) finds that effective leaders differ widely in personalities, strengths, weaknesses, values, and beliefs, but they also have something in common: the ability to get the right things done at the right time. Bennis (1994) defines leadership as the ability to meet each situation armed not with a battery of techniques but with openness that permits a genuine response. Furthermore, the definition involves leadership in the process as a single component. For instance, Amin and Abu Hassan (2010) propose leadership is a process whereby a leader with his intelligence and perseverance influences a group of subordinates to develop their potential in order to achieve the organizational goals within certain time and budget.

According to the multiple components of leadership definitions, the range of the components is various. For example, Patterson (2010) defines leadership as vision, direction, and movement. Grint (2010) identifies leadership as position, person, result and process, see Table 2-1.

Table 2-1 The four leadership characteristics

Characteristics	Description
Position	Is it where 'leaders' operate that makes them leaders?
Person	Is it who 'leaders' are that makes them leaders?
Result	Is it what 'leaders' achieve that makes them leaders?
Process	Is it how 'leaders' get things done that makes them leaders?

Source: Grint (2010)

Comparing with other scholars, Bass (1990) shows more descriptions of

leadership definitions in the multiple components. He defines leadership as an interaction between two or more members of a group that often involves structuring or restructuring of the situation and the perceptions and expectation of the members. In the interaction relationship, leaders' acts affect other people more than other people's acts affect them. Moreover, Bass distributes a classification of leadership into 12 categories as follows:

(a) Leadership as a focus of group process.

(b) Leadership as personality and its effects.

(c) Leadership as the art of inducing compliance.

(d) Leadership as the exercise of influence.

(e) Leadership as an act of behavior.

(f) Leadership as a form of persuasion.

(g) Leadership as a power relation.

(h) Leadership as an instrument of goal achievement.

(i) Leadership as emerging effect of interaction.

(g) Leadership as a differentiated role.

(k) Leadership as the initiation of structure.

(l) Leadership as a combination.

Despite these multitudes of ways that leadership has been conceptualized, Amin and Abu Hassan (2010) identifies the following components as central to the phenomenon of leadership: leadership is a process; leadership involves influences, intelligence and perseverance; leadership occurs within a group context; leadership intervenes in personal exploration and development; leadership involves goal attainment on time and within budget.

The above discussions present the definitions of leadership. To conclude, leadership is defined as a skill or ability, an action or behavior, a responsibility, a process, a function of management, an experience, an influential relationship, a position of authority; a trait or characteristic; and a style. However, there is one similarity shared by the majority of definitions – they focus on the process of influencing the activities of others. Furthermore, based on the definitions of

leadership in the previous studies, the obvious characteristics of leadership show that leadership can happen anywhere (Kouzes & Posner, 2007; DuBrin, 2010), and at any time (Kouzes & Posner, 2007). And leadership can happen in a huge business or a small one, in the public, private (personality/family), or social sector. Leadership is needed at all levels in an organization and can be practiced to some extent even by a person not assigned to a formal leadership position. Hence, leadership can happen in an organization, and to anyone.

(2) The development outcomes of leadership

Leadership is a constantly explored research topic because it is one of the critical successful factors. The research outcomes of leadership perspectives are also various in different times. For example, Chemers (2000) suggests the analysis of historical theories on leadership is divided into four periods: the first period is prior to the presentation of the contingency model; the second period is from 1965 to 1975, focusing on the development and elaboration of contingency theories; the third period is from 1975 to 1985, when cognitive theories and concerns about gender differences arose; the fourth period is since 1985, which has most extensively focused on transformational theories and cultural influences. Early leadership theories focused on what qualities distinguishing leaders from followers, while subsequent theories looked at other variables such as situational factors and skill levels. While many different leadership theories have emerged, most can be classified as follows: “Great Man” Theories, Traits Theories, Behavior Theories, Situational Theories, and Contingency Theories. Some scholars have summarized the research outcomes of leadership based on the development of leadership theories or periods. For instance, Bolden et al. (2003) reviews leadership theories and track their evolution over the past 70 years from the “great man” notion of heroic leaders, through trait theories, behaviorist theories, situational leadership, contingency theory, transactional theory, and transformational theory (see Table 2-2).

Table 2-2 From ‘Great Man’ to ‘Transformational’ Leadership

Theory	Summary
Great Man Theories	Based on the belief that leaders are exceptional people, born with innate qualities, destined to lead. The use of the term ‘man’ was intentional since until the latter part of the twentieth century leadership was thought of as a concept which is primarily male, military and Western. This led to the next school of Trait Theories.
Trait Theories	The lists of traits or qualities associated with leadership exist in abundance and continue to be produced. They draw on virtually all the adjectives in the dictionary which describe some positive or virtuous human attribute, from ambition to zest for life.
Behaviorist Theories	These concentrate on what leaders actually do rather than on their qualities. Different patterns of behavior are observed and categorized as ‘styles of leadership’. This area has probably attracted most attention from practicing managers.
Situational Leadership	This approach sees leadership as specific to the situation in which it is being exercised. For example, whilst some situations may require an autocratic style, others may need a more participative approach. It also proposes that there may be differences in required leadership styles at different levels in the same organization.
Contingency Theory	This is a refinement of the situational viewpoint and focuses on identifying the situational variables which best predict the most appropriate or effective leadership style to fit the particular circumstances.
Transactional Theory	This approach emphasizes the importance of the relationship between leader and followers, focusing on the mutual benefits derived from a form of 'contract' through which the leader delivers such things as rewards or recognition in return for the commitment or loyalty of the followers.
Transformational Theory	The central concept here is change and the role of leadership in envisioning and implementing the transformation of organizational performance.

Source: Bolden et al. (2003, p.6)

Moreover, Müller and Turner (2010) summarize the leadership perspectives over the last 80 years (see Table 2-3). The leadership perspectives from 1930s to 2000s include traits, behaviors, emotions and attitudes, outputs, contingency, integrated model.

Table 2-3 Summary of leadership perspectives

Perspective	Period	Main idea	Example scholars
Traits	1930s-1940s	Effective leaders show common traits Leaders born not made	Kirkpatrick & Locke (1991)
Behaviors	1940s-1950s	Effective leaders adopt certain styles or Behaviors Leadership skills can be developed	Tannenbaum & Schimdt (1958); Blake & Mouton (1978),
Emotions and attitudes	1990s-2000s	Emotional intelligence has a greater impact on performance than intellect	Golemen et al. (2002)
Outputs	1930s-1990s	Two types Transformational: concern for relationships Transactional concern for process	Barnard (1938) Bass (1990)
Contingency	1960s-1970s	What makes an effective leader depends on the situation	House (1971)
Integrated model	2000s	Effective leaders exhibit certain competencies, including traits, behaviors and styles; Emotions, intellect, process; Certain profits of competency better in different situations.	Dulewicz & Higgs (2005)

Source: Müller & Turner (2010, p.10)

There are also different viewpoints on some theories discussed above. For example, in “Great Man” theories, theorists believe that leaders are born rather than trained. However, there are also some opposing viewpoints. Leaders are not born, but made and often self-made, inventing themselves over time (Bennis, 2009).

Because the different perspectives, types of data, time frames, and levels of criteria may result in different conclusions about a given leader or group of leaders, Hiller et al. (2011) investigate what criteria should be used to evaluate the effects of leadership. The purpose of their study was to systematically investigate the choices of criteria used in highly respected academic research outlets over the past quarter century. They summarize various ways to answer questions about whether, when, and how leadership affects outcomes. In their study, 1,161 empirical studies over 25 years from 1985 to 2009 are content coded to answer six basic questions for the outcomes of leadership (see Table 2-4). They descriptively summarize these criterion issues in the empirical literature and draw comparisons between areas (for example, to what extent has leader member exchange, transformational, and strategic leadership research differentially examined various outcomes?).

Table 2-4 Organizing framework: Criterion Issues in Leadership Research

Issues in Evaluating Leadership Criteria	Indicators Examined in the Current Review	Indicator Categories in the Current Review
Question 1: From whose perspective is leadership judged (and linked to leadership criteria)?	Source of leadership measure	Self-report, superior, subordinate, peer, subject matter expert, manipulation
Question 2: Which type of leadership measure is used (method to collect data; which underpins relationship between leadership and criteria)?	Types of data	Survey, interview, observation, manipulation, database/company records
Question 3: On which criterion domains are leadership effects assessed?	Outcome categories	Effectiveness, attitude, behavior, cognitive
Question 4: At what time frame are leadership criteria being examined?	Temporal separation	Cross-sectional, short-term longitudinal, longitudinal
Question 5: At what level of analysis are leadership criteria being examined?	Level of outcome variable	Individual, small group, unit, organization
Question 6: What is the organizational level at which leadership effects on criteria are being examined?	Organizational level of leader	Top management, midlevel management, lower level, mixed

Source: Hiller et al. (2011, p.1140)

In the Table 2-3, the leadership research of the present study covers the contents of Issues in Evaluating Leadership Criteria, Indicators Examined in the Current Review, and Indicator Categories in the Current Review. These contents will be discussed in Chapter 2 and Chapter 3.

2.1.2 Leadership style

Different leaders have their own leading behavior styles. Hence, leadership style is to distinguish a leader's behavior (DuBrin, 2010; Arshad & Rasli, 2013). Lam and O'Higgins (2012) define leadership style as a critically important characteristic of managers. According to the discussions on leadership style, various leadership styles have been mentioned in the previous studies. However, it is not conceptually possible to describe any one "best" or "right" style of leadership (Amin & Abu Hassan, 2010). Some studies find that the different situations require different leadership styles. For example, the research findings of Yu and Miller (2005) show that generational groups in manufacturing industry have different work characteristics and require different leadership styles. Some leadership styles are introduced in our study, such as democratic leadership, autocratic leadership**,** participative leadership, servant leadership, transactional leadership, transformational leadership, and paternalistic leadership.

(1) Democratic leadership

Democratic leadership is to encourage team members to participate in decision making. This method will improve the job satisfaction of team members, and strengthen their team's identity. But this method also has a shortage: the decision-making process is slow. According to Chapman et al. (2014), a democratic leader encourages participation and exchange of ideas from her/his team regarding the directions the team should take and what actions they should prioritize. When a democratic leader faces with a complex problem, she or he will elicit ideas from others, listen attentively and build consensus, but may put off difficult decisions. Some team members may feel that she or he should "decide" more and "facilitate" less.

(2) Autocratic leadership

The characteristic of autocratic leadership shows that leaders have power only on

the individual scale. Autocratic leaders of the team only pay attention to the goal of work, only care about the completion of tasks and the efficiency. They do not care about individual team members. Team members have no chance to participate in the decision-making process. Autocratic leaders decide the goal of work and specific work plan on their own. Subordinators only passively obey the plan. Autocratic leadership will make team lack innovation and cooperation spirit, and will possibly cause aggressive behavior between members. According to DuBrin (2010), autocratic leaders retain most of the authority. They make decisions confidently, assume that group members will comply, and are not overly concerned with group members' attitudes toward a decision. Autocratic leaders are considered task-oriented because they place heavy emphasis on having tasks accomplished. Typical autocratic behavior includes telling people what to do, asserting themselves, and serving as a model for team members.

(3) Participative leadership

Participative leadership is based on management openness because the leader accepts suggestions about managing the operation from group members. The participative style encompasses the teamwork approach. Predominant behavior of participative leaders includes coaching team members, negotiating their demands, and collaborating with others. Participative leadership characterizes leaders as sharing decision making with group members. Their leadership behavior includes the downward advisory opinions and suggestions, encouraging subordinates to participate in decision-making, and encouraging collective decision-making and written recommendations. According to the definition of participative leadership made by DuBrin (2010), participative leadership could be divided into three sub-styles: consultative, consensus, and democratic. Consultative leaders confer with group members before making a decision, but they retain the final authority to make decision; consensus leaders encourage group discussion about an issue and then make a decision. All members who will be involved in the consequences of a decision have an opportunity to provide input; democratic leaders confer final authority on the group.

They function as collectors of group opinion and take a vote before making a decision. Furthermore, the participative style is well suited to managing competent people who are eager to assume responsibility.

(4) Servant leadership

Patterson (2003) presents the theory of servant leadership as an extension of transformational leadership theory, and defines and develops the component constructs underlying the practice of servant leadership. Servant leadership is related to the relationship between leaders and subordinates. Hence, servant leadership can be broadly defined as a desire from leaders to motivate, guide, offer hope, and provide a caring experience by establishing a quality relationship with the followers and subordinates (Choudhary et al., 2013). In terms of the characteristic of servant leadership, Öner (2012) puts increased service to others, including employees, customers, and community, as the chief priority. Servant leadership is also linked to the emotional well-being of employees. Choudhary et al. (2013) state that servant leadership is the one that embarks various behavioral and emotional aspects in a very useful way, leaders who take leadership as an opportunity for the valuable service to employees and customers. The role of servant leader is obvious. Stone et al. (2004) state that servant leadership focus on others rather than upon self and on understanding of the role of the leader as a servant. Supplying service is the important goal of servant leaders. Servant leadership is another extreme case, where a leader is primarily interested with serving others.

Servant leaders focus on follower's development and well being. Patterson (2003) defines servant leaders as those who lead an organization by focusing on their followers, such that the followers are the primary concern and the organizational concerns are peripheral. Greenleaf (1991) explains that the servant-leader is servant first, which begins with the natural feeling that one wants to serve. Servant leaders believe that it is their duty to see to the overall mental and spiritual well being of those with whom they associate. They are expected to create an environment in which the employees can flourish, unlike oppressive leaders, who are fearful of the

development of their employees. The servant leader's primary objective is to serve and meet the needs of others, which optimally should be the prime motivation for leadership; servant leaders develop people, helping them to strive and flourish; servant leaders provide vision, gain credibility and trust from followers, and influence others (Stone et al., 2004). According to the descriptions of servant leaders' characteristics, Patterson (2003) suggests servant leaders are guided by seven virtuous constructs which define servant leaders and shape their attitudes, characteristics, and behavior. She suggests the servant leader (a) demonstrates agape love, (b) acts with humility, (c) is altruistic, (d) is visionary for the followers, (e) is trusting, (f) empowers followers, and (g) is serving.

According to Patterson (2003), her model of servant leadership includes seven virtuous constructs that define servant leaders and shape their attitudes, characteristics, and behavior. Four of these constructs appear to be in opposition to the source of energy for extraverts; humility, altruism, service, and perhaps trust. Furthermore, Dennis (2004) develops the Servant Leadership Assessment Instrument to assess the presence of servant leadership in terms of humility, agape love, vision, trust, and empowerment. Yu et al. (2014) explore the integration relationship of paternalistic leadership and servant leadership, and analyze the relationship between paternalistic leadership, job satisfaction, and job performance under the moderation of servant leadership. Their research findings show that servant leadership has a more significant positive effect on work satisfaction; Servant leadership is the moderator in the relationship between paternalistic leadership and work performance, and between paternalistic leadership and job satisfaction.

(5) Transactional leadership

Transactional leadership involves exchange processes between leaders and followers, with followers receiving direct rewards (and punishments) for their work (Callow et al., 2009). Hence, transactional leadership is characterized with the influencing, punishing and rewarding attitude (Islam et al., 2013). In the discussions of the exchange processes, Popli and Rizvi (2015) suggest that transactional

leadership style focuses on a process of exchange to motivate subordinates by appealing to their personal drivers for work; they usually use position, policy, power and authority to maintain control and get work done through constructive and corrective transactions of reward and punishment. According to the discussions of the relationship between transactional leadership and firm performance, Arshad and Rasli (2013) state transactional leadership can help firm to achieve their objectives more efficiently by linking job performance with rewards and ensuring employees have adequate resources to get the job done.

The characteristic behavior of transactional leaders has been discussed. For instance, Burns defines transactional leaders as people who emphasize work standards, and have task-oriented aims, while transactional leaders perform their leadership within the organizational constraints and adhere to the existing rules and regulations (Jogulu, 2010). Transactional leaders determine and define goals for their subordinates, suggest how to execute tasks, and provide feedback (Ardichvili, 2001). Furthermore, the leaders provide a reward if the followers complete the tasks; in contrast, the leaders will issue punishment or use corrective measures if the tasks are not completed.

From the perspectives of Avolio and Bass (2004), transactional leadership consists of three main components: *Contingent reward (CR), Active management by exception (MBEA), and Passive management by exception (MBEP)*. The explanations of each component are as follows:

(a) Contingent reward (CR) is an exchange interaction between leaders and followers (Nazem & Eftekhary, 2014). Leaders set very clear goals, objectives and targets and clarify rewards to followers contingent on the fulfillment of role requirements and contractual obligations (Kirkbride, 2006; Callow et al., 2009; Menon, 2014). Certainly, leaders provide the resources for followers to accomplish their objectives (Kirkbride, 2006).

(b) Active management by exception (MBEA) refers to the active involvement of the leader in the effort to determine whether requirements are met (Menon, 2014). MBEA leader pays very close attention to any problems or deviations and has

extensive and accurate monitoring and control systems to provide early warnings of such problems. If something has gone wrong, leaders will teach followers how to correct mistakes (Kirkbride, 2006).

(c) Passive management by exception (MBEP) refers to a situation where the leader takes corrective action only after becoming aware that problems exist or mistakes have been made (Menon, 2014). MBEP leaders only intervene when the exceptional circumstances become obvious. Thus, they tend to have a relatively wide performance acceptance range and poor performance monitoring systems.

(6) Transformational leadership

The emergence of transformational leadership and transactional leadership appeared in the 1970s (Rafferty & Griffin, 2004; Callow et al., 2009; Jogulu, 2010; Menon, 2014). Initially, Burns developed a comprehensive theory to explain the differences between the Behaviors of political leaders by using the terms "transactional" and "transformational" (Jogulu, 2010, p.706). After Burns, transformational leadership and transactional leadership have been discussed by other authors, such as Avolio and Bass. They developed the "*full range leadership model*" in the 1990s to enrich the theory of transformational leadership and transactional leadership Avolio and Bass revised the model in 2004.

The relationship of transformational leadership between leaders and followers involves goal, personality, and its effects. Some scholars have defined transformation leadership. For instance, transformational leadership involves the building of relationships with followers based on personal, emotional, and inspirational exchanges, with the goal of developing followers to their fullest potential (Callow et al., 2009). Bass states that transformational leadership style is about leader's involvement in coming up with strategic and clear vision and communicating it effectively with their subordinates (Arshad & Rasli, 2013). Transformational leadership attributes are associated with nurturing and caring; the role is typically viewed as an ability to show consideration and develop the followers to achieve their fullest potential (Jogulu, 2010). Leadership is concerned with achieving

organizational goals. Therefore, Islam et al. (2013) suggest transformational leadership style is characterized with the positive and cooperative attitude, helping his subordinates in achieving the organizational desired outcomes. Moreover, transformational leadership is also an interaction process between leaders and followers to achieve their goals. Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society (Bolden et al., 2003). Transformational leadership is based on a participative process and intrinsic motivations, through which followers are inspired by leaders to self-identify with the organizational vision and objectives.

According to the characteristic descriptions of transformational leaders, Ardichvili (2001) describes a transformational leader as providing intellectual stimulation to employees by encouraging them to rely upon new approaches to solving old problems; to explore new ways of achieving the organization's mission and goals; to employ reasoning, rationality, and evidence rather than unsupported opinions; and to utilize intuition. Compared with other leadership styles, leaders having transformational style can teach, educate and train employees better (Islam et al., 2013). Bolden et al. (2003, p.15) state transformational leaders: expand a follower's portfolio of needs; transform a follower's self-interest; increase the confidence of followers; elevate followers' expectations; heighten the value of the leader's intended outcomes for the follower; encourage behavioral change; and motivate others to higher levels of personal achievement.

According to Avolio and Bass (2004), transformational leadership consists of five main components: *Idealized Attributes (IA), Idealized Behaviors (IB), Individualized consideration (IC), Inspirational motivation (IM), and Intellectual stimulation (IS)*. The explanations of each component are as follows:

(a) Idealized attributes (IA): Leaders serve as an example for their followers with charisma, which includes pride, loyalty, and self-confidence. Followers identify with their leaders and are willing to follow their leaders;

(b) Idealized behavior (IB): Leaders usually have higher moral standards, values and moral behavior. Leaders provide their followers' goals and vision;

(c) Inspirational motivation (IM): Leaders create motivation to inspire followers to obtain greater achievement with their vision for the future. Leaders use beliefs and emotional appeal to condensed group members to enhance the team spirit;

(d) Intellectual stimulation (IS): Leaders encourage followers to be creative and innovative. Followers think about their own beliefs and problems for themselves, and then develop their own abilities;

(e) Individual consideration (IC): Leaders create an active situation to carefully listen to the individual needs. Leaders play the roles of coach and advisor to help followers to seek individual self-fulfillment and to achieve their own needs and development.

Based on the five components of transformational leadership, Bolden et al. (2003) present the descriptions of transformational leaders' behavior (see Table 2-5).

Table 2-5 Transformational Leadership Styles and Behavior

Transformational Style	Leader Behavior
1) Idealized Behaviors: living one's ideals	• Talk about their most important values and beliefs • Specify the importance of having a strong sense of purpose • Consider the moral and ethical consequences of decisions • Champion exciting new possibilities • Talk about the importance of trusting each other
2) Inspirational Motivation: inspiring others	• Talk optimistically about the future • Talk enthusiastically about what needs to be accomplished • Articulate a compelling vision of the future • Express confidence that goals will be achieved • Provide an exciting image of what is essential to consider • Take a stand on controversial issues
3) Intellectual Stimulation: stimulating others	• Re-examine critical assumptions to question whether they are appropriate • Seek differing perspectives when solving problems • Get others to look at problems from many different angles • Suggest new ways of looking at how to complete assignments • Encourage non-traditional thinking to deal with traditional problems • Encourage rethinking those ideas which have never been questioned before
4) Individualized Consideration: coaching and development	• Spend time teaching and coaching • Treat others as individuals rather than just as members of the group • Consider individuals as having different needs, abilities, and aspirations from others • Help others to develop their strengths • Listen attentively to others' concerns • Promote self development
5) Idealized Attributes: Respect, trust, and faith	• Instill pride in others for being associated with them • Go beyond their self-interests for the good of the group • Act in ways that build others' respect • Display a sense of power and competence • Make personal sacrifices for others' benefit • Reassure others that obstacles will be overcome

Source: Bolden et al. (2003, p.16)

2.1.3 Paternalistic leadership

Hofstede (1980) proposes that effective management must be combined with the cultural specificities because the cultural values are not the same in the different countries, regions, and communities. Because of differing cultural beliefs and values, there is a greater necessity for understanding and acknowledging culturally-linked leadership styles. Jogulu (2010) examines whether cultural context facilitates the emergence of different leadership styles. He found significant differences between leadership styles and cultural groups, hence, supporting the argument that culture and leadership interact in different ways in diverse contexts. Based on the influence of culture, western researchers have concluded that generational groups of workers have different work characteristics and prefer different leadership styles (Yu & Miller, 2005). Therefore, the western leadership theories cannot be completely applied in China. Certainly, the applications of leadership theories developed in the western culture in Chinese hospital samples, cannot objectively reflect the original appearance of leadership styles in Chinese hospitals; the researchers studying the leadership of Chinese hospitals should pay more attention to the local leadership theories (Chong & Zheng, 2013). Paternalistic leadership is developed in Chinese culture context. Fu et al. (2013) suggest paternalistic leadership is the distinctive characteristics of leadership style of senior leaders in Chinese enterprises. Zheng et al. (2003) state that paternalistic leadership widely exists in the enterprises, public institutions, and other public organizations in the Chinese culture context and in the world. Hence, the present study mainly discusses paternalistic leadership.

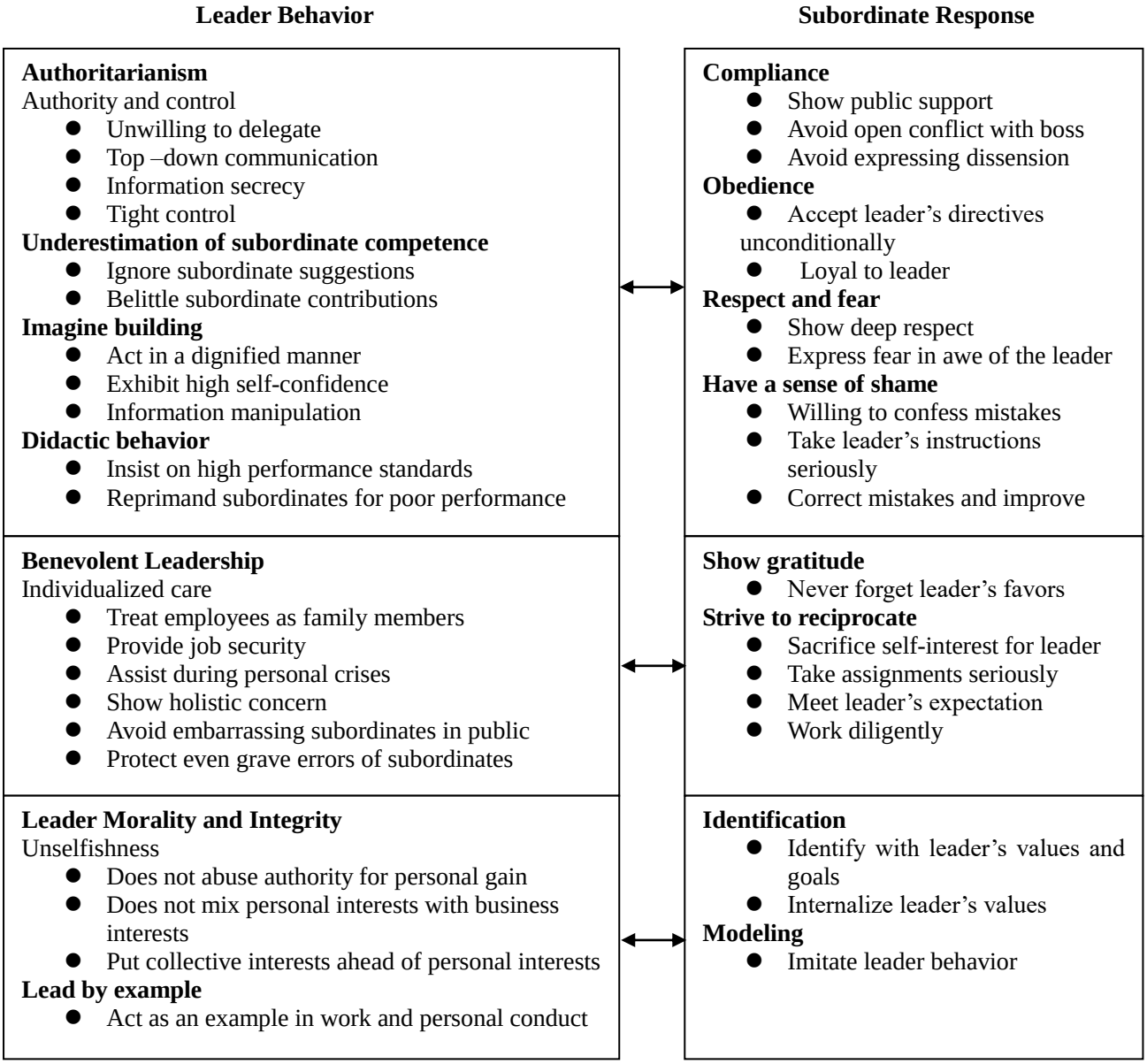
This section presents the definition of paternalistic leadership, origin and development of paternalistic leadership, model of paternalistic leadership, and its comparison to transformational leadership.

(1) Definition of paternalistic leadership

Compared with other leadership theories, paternalistic leadership is developed much later and less popular. The most popular definition of paternalistic leadership is

the one introduced by Fan and Cheng (2000). They define paternalistic leadership as a style that combines strong discipline and authority with fatherly benevolence and moral integrity. In their study, paternalistic leadership consists of three essential elements: authoritarianism, benevolence, and moral leadership. Authoritarianism means a leader asserts strong authority and control over subordinates and demands unquestioned obedience from subordinates; benevolence means a leader demonstrates individualized, holistic concern for subordinates' personal or familial well-being; moral leadership suggests that a leader demonstrates superior personal virtues, self-discipline, and unselfishness. Based on the definitions of authoritarianism, benevolence, and moral leadership, and the descriptions of the relationship between paternalistic leader behavior and subordinate response in Figure 2-1, authoritarianism is not helpful in stimulating subordinate enthusiasm; while benevolence and moral leadership can help to stimulate subordinate enthusiasm. The different levels of subordinate enthusiasm will influence their work performance. Certainly, subordinate work performance also will directly influence team or organizational performance. In other words, authoritarianism is a negative factor in subordinate enthusiasm. Benevolence and moral leadership are positive factors in subordinate enthusiasm. Hence, we can conclude that authoritarianism is a negative factor in performance; benevolence and moral leadership are positive factors in performance.

Figure 2-1 Paternalistic leader behavior and subordinate response



Source: Fan & Cheng (2000, p.98)

Moreover, Pellegrini and Scandura (2008) claim that paternalism is an effective leadership style in many non-Western cultures mainly because paternalistic leaders are both benevolent and authoritarian. Paternalism is a word derived from the Latin root "pater," meaning "father." The leader assumes the role of a parent, a father who knows best (Öner, 2012). Paternalism in leadership has existed throughout history and seems to derive its power from the psychological experience of a family in which the father plays a particular leadership role. Fu et al. (2013) hold that paternalistic

leadership refers to a similar patriarchal style and a strong and clear authority, which also has the composition of care, understanding the subordinates, and moral leadership. They identify paternalistic leadership as the distinctive characteristics of leadership style of senior leaders in Chinese enterprises.

(2) Origin and development of Paternalistic leadership

People's behavior is based on their culture background and social environment. Leadership behavior is affected by the cultural context and business environment. Born in the Chinese culture context, paternalistic leadership is one of the popular leadership theories in Chinese businesses. Table 2-6 shows the representative researches of paternalistic leadership.

Table 2-6 Representative researches of paternalistic leadership development

Scholar	Silin	Redding	Westwood	Cheng B.S.	Fan & Cheng
Year	1976	1990	1997	1995a	2000
Research method	Interview	Interview	Literature review	Survey, interview, case study	Literature review
Research sample	Big family enterprises in Taiwan, China	Chinese enterprises in Hongkong, Taiwan, Philippines	Chinese enterprises in Southeast Asia	Private enterprises in Taiwan, China	Private enterprises in Taiwan, China
Research focus	Describing business idea and leadership style of entrepreneurs	Exploring the relationship between culture value and leader, constructing the concept of paternalistic leadership	Explaining the leadership influence of cultural value on the family business	Constructing the model of paternalistic leadership, describing the specific leader behavior and subordinate response	Proposing the three elements of paternalistic leadership, analyzing the cultural origins of paternalistic leadership

Source: Chen (2014, P.30)

At the end of the 1960s, Silin, a western scholar, began the first research on paternalistic leadership in Taiwan, China. Based on his study, Silin (1976)

summarizes the leadership behavior of Taiwanese enterprises in the 1960s. He found the leadership behavior of the owners and managers were obviously different from those of the west. The distinctive leadership behavior include didactic leadership, moral leadership, centralized authority, maintaining social distance from subordinates, keeping intentions ill-defined (hiding intentions from subordinates to maintain authority) and control. The research findings of Silin (1976) are the base of the concept of paternalistic leadership.

In 1980s, Redding focused on the study of the organizational structure and management style of Chinese family businesses based on the study of Silin. He clearly proposed the concept of Chinese capitalism after he interviewed 72 Chinese entrepreneurs of Chinese family businesses in Hong Kong, Taiwan, Singapore, and other Southeast Asia countries (Chen, 2014). He found paternalistic leadership was popular in Chinese family businesses. Redding (1990) describes the characteristics of paternalistic leadership as:

(1) Dependence of the subordinate as a mind-set;

(2) Personalized loyalty, leading to subordinates' being willing to conform;

(3) Authoritarianism modified by sensitivity to subordinates' views;

(4) Authority not divisible when it has become clearly identified with a person;

(5) Aloofness and social distancing within the hierarchy;

(6) Allowance for the leader's intentions to remain loosely formulated;

(7) The leader as exemplar and 'teacher'.

Westwood is the third western scholar to explore paternalistic leadership after Silin and Redding. In order to distinguish from the leadership concept of western cultural context, Westwood (1997) proposed the concept of "paternalistic headship" because of the characteristics of eastern culture. He identified nine specific leadership styles of paternalistic headship: didactic leadership, non-specific intentions, reputation building, protection of dominance, political manipulation, conflict diffusion, and dialogue ideal etc. The two new styles in Westwood's research findings are conflict diffusion and dialogue ideal (Chen, 2014). Conflict diffusion means that leaders well know subordinates' thinking and concern about their growth through informal

communication with them; leaders try to prevent and resolve the public conflicts between their subordinates.

In the 1990s, Cheng found paternalistic leadership was popular after he interviewed 18 CEOs / owners and 24 managers of family enterprises (Chen, 2014, p.30). Cheng (1995b) proposed the two elements of paternalistic leadership, which are establishing authority and mercy dimensions. Based on the previous studies, Fan and Cheng (2000) contend that paternalistic leadership consists of three elements: authoritarianism, benevolence and moral leadership. Compared with Cheng's model, authoritarianism and benevolence are the same as establishing authority and mercy dimensions; moral leadership is a new dimension (Chen, 2014).

Some scholars have explored this leadership style with Chinese cultural characteristics in their empirical studies along with the development of paternalistic leadership. They explore the effectiveness of paternalistic leadership with western leadership theory. Their samples are mainly the enterprises of China mainland and Taiwan. According to the outline descriptions of these empirical studies, Chen (2014) summarizes these studies about paternalistic leadership focus on three aspects: the evidence of the widespread existence of the paternalistic leadership in various Chinese organizations of non-family businesses, the development of paternalistic leadership scale, and the effectiveness test of paternalistic leadership as well as the comparison of effectiveness with western leadership theory (see Table 2-7).

Table 2-7 Representative empirical studies of paternalistic leadership

Scholar	Year	Antecedent variable	Result variable	Mediator/Moderator variable	Effective sample
Wang	2002	Paternalistic and charismatic leadership	Interpersonal harmony, job satisfaction, individual and group performance	Interpersonal harmony	679 employees of Taiwan enterprises
Zhang	2001	Paternalistic and transformational leadership	Leadership and job performance		249 staff of Taiwan military unit
Qiu	2001	Paternalistic and transformational leadership	Leadership effectiveness		Retired servicemen club staff in Taiwan
Ling	2001	Paternalistic, transformational, and transactional leadership	The quality of the relationship between leaders and subordinates, loyalty, organizational citizenship behaviors		Middle rank Supervisor of Taiwan military unit
Zheng et al.	2003	Paternalistic and transformational leadership	Subordinate response (Western loyalty, local loyalty), working attitude (Leadership satisfaction, job satisfaction, and organizational commitment)	Authority orientation	57 enterprises of China mainland, and 240 leaders and subordinates
Cheng et al.	2004	Paternalistic leadership	Subordinate response (Identity emulation, obedience without breach, and be grateful)	Authority orientation	64 enterprises of Taiwan, and 543 middle and low management staffs and general staffs

Huang	2002	Paternalistic, transformational, and transactional leadership	Team process (team work and communication quality)		274 members of 71 teams of electronic and telecommunication industries etc. in Taiwan
Cheng et al.	2002	Paternalistic leadership	Effectiveness of team members	Team interaction	71 teams of Taiwan, and 400 supervisors and team members
Liu & Ling	2004	Paternalistic leadership	Value orientation of employee (collective orientation, family orientation)		566 staff of state-owned, private, and foreign enterprises in China mainland
Wu et al.	2007	Paternalistic, transformational, and transactional leadership	Leadership effectiveness	Organizational justice and trust	20 state-owned and private enterprises of China mainland, 256 leaders and subordinates
Li et al.	2007	Paternalistic and transformational leadership, PM	Employee satisfaction, organizational commitment, and leadership effectiveness		288 students of part- time postgraduate program and enterprise management trainees, and enterprise staff
Zhou & Long	2007	Paternalistic leadership	Organizational justice		428 staff of enterprises and institutions in China mainland

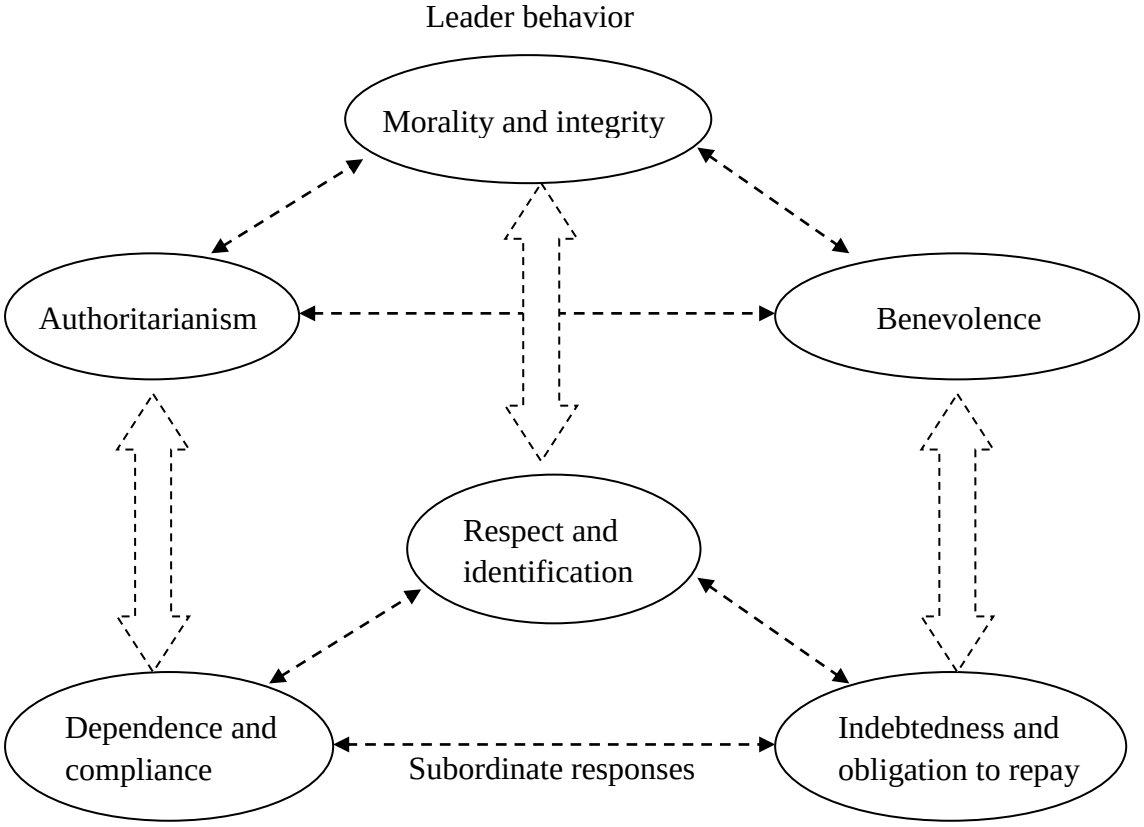
Ju et al.	2008	Paternalistic and transformational leadership	Firm performance	Employee trust, employee working attitude	361 middle and senior managers of 308 private enterprises in China mainland
Yu et al.	2008	Paternalistic leadership	Organizational learning		276 employees of 10 state-owned, private, and foreign enterprises in China mainland
Cheng et al.	2002	Paternalistic and transformational leadership	External behaviors of the role	Quality of the relationship between leaders and subordinates	800 principals and teachers of 200 Taiwan national primary schools
Wu et al.	2002	Paternalistic leadership	job satisfaction	Feelings of anger, Feelings of control	609 employees of Taiwan enterprises
Chen et al.	2007	Paternalistic leadership	Physical and mental health of subordinates	Individualistic cultural values of subordinates	169 employees of 13 sub companies of a large multinational corporation in Taiwan
Wan	2010	Paternalistic leadership	Team identity and relationship	Team citizenship behaviors	336 personal questionnaires of 72 teams

Source: Chen (2014, pp.34-35)

(3) Model of Paternalistic leadership

In the model of paternalistic leadership, three-element theory is the most popular model, which is based on Fan and Cheng (2000): authoritarianism, benevolence, and moral leadership (see Figure 2-2). Hayek et al. (2010) contend that paternalistic leaders presume the need to protect followers who they view as incapable of caring for themselves. An authoritarian paternalistic leader asserts controlling authority and demands subordinates to comply fully with his or her orders without dissent; a benevolent paternalistic leader exhibits a personalized concern for subordinates' personal and family well-being while expecting subordinates to feel grateful and obliged to reciprocate when appropriate; a moral paternalistic leader possesses virtues of non-abusive behavior and acts as an exemplar in personal and work conduct that lead subordinates to respect and identify with the leader (Pellegrini & Scandura, 2008). In paternalistic cultures, people in authority assume the role of parents and consider it an obligation to provide protection for others under their care such as personal welfare. Subordinates, in turn, reciprocate such care and protection from the paternal authority by showing loyalty, deference and compliance.

Figure 2-2 Three elements of paternalistic leadership and subordinate responses



Source: Fan & Cheng (2000, p.120)

(4) Comparison between paternalistic and transformational leadership

The above discussions show the definitions of paternalistic leadership and transformational leadership. Although both paternalistic leadership and transformational leadership involve the relationship between leaders and subordinates, their distinctions are obvious. They have different components. Paternalistic leadership consists of authoritarianism, benevolence, and moral leadership; while transformational leadership consists of Idealized Attributes (IA), Idealized Behaviors (IB), Individualized Consideration (IC), Inspirational Motivation (IM), and Intellectual Stimulation (IS). Paternalistic and transformational leadership occur in different cultural contexts. Paternalistic leadership is developed in Chinese cultural context. Transformational leadership is based on western culture.

Furthermore, their objects of subordinates' emotions are distinct. Subordinates' emotions introduced by transformational leaders direct toward both the leader and the

organization as a whole, whereas emotions introduced by paternalistic leaders tend to remain at the interpersonal level, directing toward the leader who exercises paternalistic leadership instead of the entire organization. The extent of leaders' concern about their subordinate's personal welfare is also different in two leadership styles. Transformational leaders provide individual care that is primarily limited to the work lives. However, paternalistic leaders provide individualized care in subordinate's work as well as personal lives (Chong, 2013). The difference can be attributed to different cultures. In the western culture, subordinates will perceive their leaders' involvement in their personal lives as a violation of privacy; work and home are often clearly distinguished (Chua et al., 2008).

The two leadership styles have different impacts on innovation. Authoritarianism of paternalistic leadership will weaken the feeling of support of the subordinates in the organization, reduce subordinate's satisfaction and weaken the innovative enthusiasm to stifle innovation idea generation (Fan & Zheng, 2000; Zhang et al., 2009); On the contrary, transformational leadership focus on stimulation, excitement, and encouragement to subordinates. Transformational leaders encourage the development of individual needs and the achievement of personal goals (Menon, 2014). Ardichvili (2001) states that a transformational leader provides intellectual stimulation to employees by encouraging them to rely upon new approaches to solving old problems; to explore new ways of achieving the organization's mission and goals; to employ reasoning, rationality, and evidence rather than unsupported opinions; and to utilize intuition. Hence, transformational leadership can improve innovation, but paternalistic leadership will weaken innovation. In summary, the impact of transformational leadership is more favorable to innovation than paternalistic leadership.

2.2 Innovation

Innovation is an attractive research field because innovation has become one of the main strategies that organizations use to achieve competitive advantage and

increase organizational performance (Lee et al., 2011; Ruiz-Jiménez & Fuentes-Fuentes, 2013). The business environments are becoming increasingly competitive. Hence, innovation is a key concept for organizations today, as it represents the essence of their competitive advantage (Organization for Economic Co-operation and Development (OECD), 2005). There are many descriptions of innovation importance from different perspectives: innovation plays an important role in developing the economy, in expanding and sustaining the high performance of firms, in increasing industrial competitiveness, in improving the standard of living, and in creating a better quality of life (Ar & Baki, 2011). Furthermore, Lin and Chen (2007) state innovation research can be approached from the perspectives of an individual, an organization, and a nation, focusing on personal traits, innovation management, and a nation's source of competitiveness.

The explanations of previous literature present the definitions of innovation from both the perspective of individual and organization. For example, from the individual perspective, Drucker (1985) defines innovation as the means by which the entrepreneur either creates new wealth-producing resources or endows existing resources with enhanced potential for creating wealth. On the other hand, innovative companies are especially adroit at continually responding to change of any sort in their environments and are characterized by creative people developing new products and services (Peters & Waterman, 1982). This explanation is from the organizational perspective. Innovativeness is generally defined as a firm's tendency and ability to introduce innovations; an innovation is the implementation of a new or significantly improved product, process, or organizational or marketing method (Kmieciak et al., 2012). Certainly, it seems just to explain the business in the above definitions of innovation. Nevertheless, the essence of innovation is the same for both profit and non-profit organizations. Furthermore, according to the contents of innovation, Liao et al. (2008) state that innovation may be seen as the development of a new product or service, a new management strategy, a new procedure, or a new technology.

Table 2-8 Summary of literature in innovation in healthcare services

Categories	Indicating factors	Supporting relevant literature
Innovation	Five types of innovation Services new to the company Products new to the company and consumers Reflect to environmental changes and uncertainty Diffusion of innovation	Schumpeter (1934) Evangelista and Sirilli (1995); Cooper et al. (1994) Lynn and Gelb (1997) Damanpour and Even (1984) Rogers (1995); Tornatzky and Klein (1982); Zaltman et al. (1973)
New ideas/decision making	Organizational culture Organizational efficiency Market orientation Competitive advantage	Becker and Whisler (1967); Slater and Narver (1995); Deshpande and Webster (1989); Rogers (1995)
IT involvement	IT uses	Nemeth and Cook (2007); Fichman and Kemerer (1999)
Roll-out process strategy	Centralization and formalization style of working Commitment than control based strategy Maintain positive relationships and interactivity between employees Streamline the business process	Zmud (1982) Khatri et al. (2006) Ekedahl and Wengstrom (2008); Vogus and Welbourne (2003); Fitzgerald et al. (2002) Inamdar et al. (2002); Drucker (2002)

Source: Thakur et al. (2012, p.565)

According to the discussions on innovation in healthcare, Thakur et al. (2012) define healthcare innovation as adoption of those best-demonstrated practices that have been proven to be successful and implementation of those practices while ensuring the safety and best outcomes for patients and whose adoption might also affect the performance of the organization. In other words, innovation in healthcare is defined as those changes that help healthcare practitioners focus on the patient by helping healthcare professionals work smarter, faster, better and more cost effectively.

Innovation is a new way of helping medical professionals work smarter, faster, better and more cost effectively while providing high quality care. Table 2-8 provides the summary of the literature covered in the study of Thakur et al. (2012).

Compared with other industries, hospitals have their particularities. However, in today's competitive environments, innovation bears the same importance to the hospitals. Hence, innovation is becoming a critical approach to increasing hospital performance. Regardless of the technologies or methodologies being employed, to derive benefits from strategic opportunities and address problems, hospitals have to change their business processes, products/services, and/or to the organization itself. Therefore, hospitals have adopted new policies, methods and technologies to change their processes, improve services, and support other organizational changes necessary for better performance (Caccia-Bava et al., 2009). Today, in order to improve hospital services, the majority of Chinese hospitals adopt information technology. This innovation can help patients reduce the waiting time in the process of medical treatment. The final result can lead the hospitals to improve their performance after they increase patients' satisfaction.

The categorizations of innovation types present various perspectives. From the model perspective, Baregheh et al. (2012) summarizes the models of the categorizations of innovation as follows: one of the earliest models divide innovation into the following types: organizational structure, production process, people, and product/service; various binary models proposed in the 1970s and 1980s discuss administrative, technical, incremental, radical, product, and process, as types of innovation; and more recently, a number of integrative models have been proposed, all of which identify a number of different types of innovation. For example, Oke et al. (2007) discuss the following types of innovation: product (including radical and incremental), service, and process (including administrative, service and production).

The categorizations of innovation types are not only presented in models, but also from other perspectives. Some scholars such as Francis and Bessant (2005); Bessant and Tidd (2007); Baregheh et al. (2012), propose the four typologies of innovation - product, process, position and paradigm - as the basis for innovation

types: *Position innovation* changes in the context in which products/services are introduced; *Process innovation* changes in the way in which things (products/services) are created and delivered; *Product innovation* changes in the things (products/services) which an organization offers; *Paradigm Innovation* changes in the underlying mental models which frame what the organization does. Moreover, Table 2-9 shows that other four types of innovation are product, process, organizational and marketing innovation.

Table 2-9 The four types of innovation

Type	Description
A product innovation	The introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses, including significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.
A process innovation	The implementation of a new or significantly improved production or delivery method. This includes substantial changes in techniques marketing and organizational innovations cover activities excluded from the above definitions.
Marketing innovation	Involving significant changes in product design or packaging, placement, promotion or pricing.
Organizational innovation	involving a firm's business practices, workplace organization or external relations, including to establish databases of best practices, lessons and other knowledge; introduction of management systems for general production or supply operations, such as supply chain management, business re-engineering, lean production and quality management.

Source: OECD (2005)

Innovation types are also categorized from the perspective of innovation activities as incremental or radical. Lin and Chen (2007) adopt the dichotomous incremental and radical innovation as the first layer classification, and name it the "nature" of innovation, which is further categorized as technological, marketing, administrative, and strategic innovations: Technological innovations are defined as introducing changes to product, process, or service technology; marketing innovations include a new brand, new market, and new sales approach; administrative innovations refer to changes in the organization's structure or administrative processes; strategic innovations focus on measures to produce a sustainable competitive advantage and reinvent the rules of competition. Furthermore, some authors focus on the specific types of innovation, such as product, service, and process (Oke et al., 2007) or new product development, process innovation, and new ways of working (Laforet, 2011).

According to the discussions on the types of innovation in the healthcare industry, Herzlinger (2006) put forward three types of innovation, which are customer-focused innovation, technology based innovation, and integrator innovation. The three types of innovation are important in healthcare systems: customer-focused innovation focuses on reducing patients' waiting time as well as expenses and medical cost; the technology-based innovation is conducted for improving the delivery system that depends on supply chain so that improved processes can provide high quality care, new types of treatment, prevention of diseases, reduced delivery time of products and services, and improved quality of delivered products and IT applications; the integrator innovation is made for improving efficiency of healthcare services, group purchasing, integrated network, IT, and supply chain.

In general, there are two obvious characteristics of innovation. The definition of innovation developed by Fernández-Mesa et al. (2013) introduces two requirements that must be fulfilled: novelty and utility. The requisite of novelty is verified when the innovation process puts into practice an invention, a scientific discovery or a new production or management technique. The requisite of utility is borne out through its use or commercial success.

2.3 Performance measures

The performance measures are not all the same in different industries. This section presents the introduction of performance measures and the measures of hospital performance.

2.3.1 Introduction of performance measures

Performance is an attractive research concept because of its great influence on the organizational development. But performance is difficult to define; its content depends on the perspective of the examination (Sillanpää, 2011). Simpson et al. (2012) suggest business performance is viewed as a complex concept. Performance indicates how well the activities, operations and business processes of an enterprise are performed (Bradea & Mărăcine, 2015). On the other hand, performance measurement can be described as a method of assessing the performance of individuals, organizations, services or processes, for example, as a means of assessing efficiency and effectiveness of action and assessing the alignment of the organizations' activities with its strategy and vision/mission statement (Basu et al., 2010). Some characteristics of performance measures are identified. These characteristics can provide more information of performance measures. Gomes et al. (2011) describe the critical characteristics of performance measures and measurement systems as follows:

(1) Must reflect relevant non-financial information, based on key success factors of each organization;

(2) Should be implemented as means of articulating strategy and monitoring organization results;

(3) Should be based on organizational objectives, critical success factors and customer needs and monitoring both financial and non-financial aspects;

(4) Must accordingly change dynamically with the strategy;

(5) Must meet the needs of specific situations in relevant manufacturing operations, and should be long-term oriented, as well as simple to understand and

implement;

(6) Must make a link to the reward systems;

(7) Financial and non-financial measures must be aligned, and used within a strategic framework;

(8) Should stimulate the continuous improvement processes;

(9) Must be easy to understand and to use;

(10) Must be clearly defined and have a very explicit purpose; and

(11) Should allow a fast and rigorous response to changes in the organizational environment.

2.3.2 Measures of hospital performance

In health care, performance means the quality of medical services, targets and strategic objectives, efficiency and effectiveness and the obtaining of the desired financial results (Bradea & Mărăcine, 2015). For another objective of the welfare services, Sillanpää (2011) suggests that a central underlying motivation for performance measurement is the need of organizations to demonstrate their value and achievements to various stakeholders.

Both public and private healthcare organizations face a turbulent and threatening environment. An impetus for significant environmental change comes from many sources which include state or/and local healthcare reform efforts, international and domestic economic and market forces; demographic shifts, lifestyle changes together with technological advances within the healthcare industry. As a result, in health and social care, there has been increasing attention to performance measurement and service improvement (Koumpouros, 2013). The measures of hospital performance are different from other industries, especially in the public hospitals. Healthcare services are complex and challenging to measure (Dey et al., 2008). Therefore, hospital performance and its measurement also provide unique challenges for researchers examining the healthcare field (McDermott & Stock, 2007).

Health services sector is a complex area with its unique characteristics. It has too many dimensions to be fitted into a simple singular unit and it is therefore essentially

very difficult to approach the measurement of the performance of healthcare services by using one method or another. Hariharan et al. (2004) state the healthcare delivery is generally evaluated by three categories of measurement, namely, structure, process and outcome. The structure of the hospitals is assessed by the human and material resources available in each hospital. Outcomes are usually evaluated by the standardized mortality ratio which is the ratio of the observed to expected mortality rate in each hospital. Processes in hospitals have been difficult to measure by specific metrics. The categories of measurement are identified. The measurement categories are going to be presented and discussed in the next sections. In order to assess the perceived effectiveness of multi-hospital organizations, Yavas and Romanova (2005) use three principles to guide the selection of performance indicators: first, indicators must correspond to the diverse objectives of participating in the study; second, since single indicators are inherently deficient and cannot capture diverse goals, multiple performance indicators are essential; third, performance indicators should be able to capture both behavioral and financial goals that are essential for the continuance of the partnership.

Traditionally hospital performance measurement is done by measuring certain specific metrics that are thought to be the important indicators of the overall performance. But a single performance measure is generally inadequate (Kumar et al., 2005). Most often performance targets multiple dimensions, as there are multiple objectives for a hospital (Bradea & Mărăcine, 2015). Organizational performance in a hospital, particularly from a strategic perspective, can be viewed as a construct that combines multiple dimensions, such as clinical outcomes, financial performance, productivity, and operational measures (McDermott & Stock, 2007; Basu et al., 2010). Moreover, the performance measures of hospital are multiple inputs and outputs. The hospital input measures include the number of bed days, number of physicians, and number of health personnel; the output measures include the number of patient days, number of minor operations, and number of major operations (Shammari, 1999; Sarkis & Talluri, 2002).

The majority of the hospital performance measures focus on the quality measures,

cost measures, and financial measures. Quality measures would provide for a more comprehensive picture of performance (Capkun et al., 2012). Hence, quality has also been widely used as a performance outcome in healthcare research. Quality has been measured by many different means, including self-reported quality measures, medical errors, and mortality rates (McDermott & Stock, 2007). Furthermore, Capkun et al. (2012) divide the quality into internal quality and external quality: internal quality may be measured at different stages in hospital operations, such as clinical outcomes, customer service, or internal processes; external quality may be measured through perceived quality and patient satisfaction. As for the cost measures, McDermott and Stock (2007) state that healthcare costs have become an important issue, so the use of cost improvement or cost containment as a performance measure has been very common in healthcare research. Most existing studies have focused on internal cost measures, such as average length of stay, occupancy rate, or financial status measures, such as revenue per patient day (Capkun et al., 2012). Li and Collier (2000) consider that the hospital financial performances are return on assets, return on investment, and operating profit. Furthermore, Lied (2001) proposes the four generic categories of performance indicators which are clinical, health status, patient satisfaction, and administrative/financial. The performance measures include patient length of stay, source of payment, primary and secondary procedures, principal and secondary procedures, major diagnosis category, and patient demographics.

In summary, the introduction of performance measures presents the functions of performance to organizations and their characteristics. The measures of hospital performance are identified. In the measures of organizational performance, there are both financial and non-financial measures. The study will adopt the Balance Score Card (BSC) to measure the hospital performance. We will introduce the BSC in Chapter 3.

2.4 Leadership style, innovation, and performance

This section presents the relationship between leadership style and innovation, the relationship between innovation and organizational performance, the relationship between leadership style and organizational performance, and the knowledge gap.

2.4.1 Leadership style and innovation

Senior leadership plays a critical role in fostering the right climate for innovation; innovation is a core part of the leadership agenda, which is central to improving innovation (DiLiello & Houghton, 2006). According to the discussions on the relationship between leadership style and innovation, some leadership styles have been studies, such as transformational and transactional leadership. Authors (Avolio, 2005; Matzler et al., 2008; Pitta, 2008; Paulsen et al., 2013) contend that transformational leadership has a positive effect on innovation. Other scholars also explore the relationship between leadership style and innovation in their studies. For example, Paulsen et al. (2009) investigate the effects of the charismatic dimension of transformational leadership on team processes and innovative outcomes in research and development (R&D) teams. The results of their study reveal the importance of managers in assuming a charismatic style of transformational leadership to encourage innovation. Schweitzer (2014) suggests that transformational leadership behavior has a greater influence on the development of innovation (dynamic) capabilities of a strategic alliance than on that of operational (substantive) capabilities, and that transactional leadership behavior mainly preserves operational capabilities. His research findings confirm the positive relationship between transformational leadership and the development of innovation and operational capabilities; transactional leadership behavior is not only associated with operational capability development, but notably contribute to the development of innovation capabilities.

According to the previous discussions, the impact of transformational and transactional leadership is obvious on innovation. Due to the differences of

management situations, transformational/transactional leadership theory prevalent in Western culture is not necessarily suitable for enterprises in eastern culture (Fu et al., 2013). Fan and Zheng (2000) suggest that paternalistic leadership is a common mode of leadership in Chinese enterprises, which are located in China mainland, Hong Kong, Taiwan, Indonesia and Singapore and other places. Recently, some authors have suggested that PL may also be relevant for understanding innovation. According to this perspective of the impact of paternalistic leadership on innovation, authoritarianism will weaken the feeling of support of the subordinates in the organization, reduce subordinate satisfaction and weaken the innovative enthusiasm to stifle innovation idea generation; benevolence can be more tolerant of differences and conflicts, making it easier to explore innovative ideas. In addition, benevolence improves subordinate enthusiasm, increases subordinate satisfaction and has the advantage to fully mobilize the enthusiasm for the work of the primary sector (Fan & Zheng, 2000; Zhang et al., 2009). Fu et al. (2013) believe that the impact of paternalistic leadership on exploratory and exploitative innovation is more practical significance for Chinese enterprise. The purpose of their study is to analyze the impact of paternalistic leadership on innovation. Their results show that authoritarianism has a directly negative effect on exploitative innovation and positively moderates the effectiveness of exploitative innovation; benevolence has a directly positive effect both on exploratory innovation and exploitative innovation; benevolence negatively moderates the effectiveness of exploratory innovation and positively moderates the effectiveness of exploitative innovation.

In general, the above discussions have proved that leadership styles have an impact on innovation, such as transformational leadership, transactional leadership, and paternalistic leadership. Fu et al. (2013) analyze the impact of paternalistic leadership on innovation in high-tech enterprises. However, there are few studies exploring the relationship between paternalistic leadership and innovation in the healthcare sector. Thus, our study will explore the impact of paternalistic leadership on innovation in the healthcare sector. There is a contribution to the definition of the present study hypothesis.

2.4.2 Leadership style and organizational performance

Most scholars argue that leadership styles are an important variable to organizational effectiveness. For instance, Bass (1990) found that much existing literature concerns the importance of leadership competencies and of leadership influence on organizational operation. Operational performances are closely related to leadership behavior (Wu, 2014). Leadership competence or personal ability influences organizational performance. Leadership plays a key role in the survival and success of entrepreneurial ventures. Leadership competencies of entrepreneurs have a positive and significant effect on firm growth (Yitshaki, 2012). Hence, leaders may play a pivotal role in organizational operations. And leadership behavior of leaders is critical to organizational survival and development. DuBrin (2010) emphasizes that the leader characteristics and traits influence leadership effectiveness. He showed that the result of a study is disclosed when the environment is uncertain, and charismatic leadership is more closely related to performance. Effective leadership is viewed as an essential factor for organizational success. Effective leadership style is a critical task of all organizations (Amin & Abu Hassan, 2010). Arshad and Rasli (2013) state an effective leader is able to influence follower to act accordingly to achieve organizational goals. As a result of followers' interaction with their leaders, the leadership style of leaders can have a significant impact on the success of the organization (Lam & O'Higgins, 2012). Leadership style is an important characteristic of leaders. Therefore, firm's performance would be different when leaders apply the different leadership styles (Arshad & Rasli, 2013).

Some leadership styles have been proved to be positive to organizational performance, such as transformational and transactional leadership (Matzler et al., 2008; Valdiserri & Wilson, 2010; Paladan, 2012). In an empirical study, O'Regan et al. (2005) find that transformational leadership style is likely to lead to greater performance in the long term; firms with transactional leadership style show a significant correlation with short-term performance only. Their study also found that firms strongly emphasizing any of the leadership styles performed better than firms

with uncertain or weak leadership styles. According to the studies about leadership style and performance in Chinese hospitals, we found a few studies. For instance, Chong (2013) investigates the mechanism about how department leader's paternalistic leadership affects department performance in China teaching hospitals through team-level analysis. The results showed that team psychological safety and team empowerment sequentially mediated the effects of benevolent leadership and moral leadership of paternalistic leadership on team performance. His study confirmed the positive effects of benevolent leadership and moral leadership on hospital operation, especially in Chinese teaching hospitals which have unique characteristics. However, some previous studies hold different viewpoints comparing the obvious impact of leadership on organizational performance. Svensson and Wood (2006) suggest that the different perspectives are mainly categorized into four kinds. Firstly, leadership tends to have a minor impact on organizational performance. Secondly, leadership has little or no impact on organizational performance. Thirdly, the association between leadership and organizational performance is weak, non-existent and even contradictory. Fourthly, the impact of leadership on organizational performance may be seen as one side of the reality, while the other side refers to the notion that the leadership has at best limited, or no impact at all.

The above discussions show the different perspectives on the impact of leadership on organizational performance. Finally, our study contends that leadership has an obvious impact on organizational performance. And we focus on the relationship between paternalistic leadership and performance.

2.4.3 Innovation and organizational performance

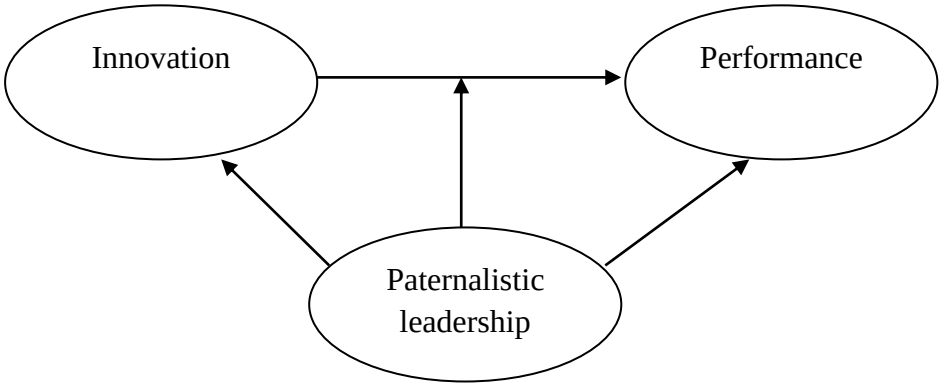
Innovation has been defined as an essential contribution to organizational performance. DiLiello and Houghton (2006) suggest that innovation and creativity are generally considered to be critical competencies for improving organizational staying power. Innovation has been a dominant factor in maintaining worldwide competitiveness. Marketing and innovation play the most significant roles in the success of any firms; especially for firms from transitional economy like China,

market orientation and innovation are proved to be the top two important discriminant factors separating the high- and low-performance groups (Zhang et al., 2015). Moreover, the most frequently used performance measures are innovation in terms of the process (Oke et al., 2007; Mbizi et al., 2013), product/service (Oke et al., 2007; Ngah & Ibrahim, 2009; Mbizi et al., 2013). The ultimate reason for firms to innovate is to gain benefits, such as competitive advantage and improved performance (Hamilton & Asundi, 2008; Kmieciak et al., 2012). In terms of the types of innovation, some research findings have shown product innovation has a direct and positive effect on firm performance (Ar & Baki, 2011). Generally, innovation has been proved to be significant to firm performance in the previous studies.

2.5 Research model, questions, and hypotheses

In the section 2.4, the discussions show the relationship between leadership style and innovation, the relationship between innovation and organizational performance, and the relationship between leadership style and organizational performance. In this study, we adopted paternalistic leadership style. Hence, the conceptual research model can be built as is shown in Figure 2-3.

Figure 2-3 The conceptual model



Source: the author.

The objective of quantitative research is to examine the relationship between the independent variable and dependent variable (Creswell, 2002). The purpose of the

study is to examine the relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals. Based on this relationship, the present study will answer the following questions:

Q1: What is the relationship between leadership style, innovation, and performance in Chinese public hospitals?

Q2: Does paternalistic leadership positively moderate innovation and performance?

Q3: Which factor of paternalistic leadership has the greatest effect on the hospital CEOs in the study?

In the conceptual model, paternalistic leadership is the moderate variable. Paternalistic leadership consists of three elements: authoritarianism, benevolence, and moral leadership. According to the discussions on paternalistic leadership, generally authoritarianism is identified as a negative factor; benevolence and moral leadership are identified as positive factors. Based on the conceptual model, research questions, and Fu et al. (2013), the overall research hypotheses are proposed as follows:

H1: Authoritarianism is negatively related to innovation.

H2: Benevolence is positively related to innovation.

H3: Moral leadership is positively related to innovation.

H4: Authoritarianism is negatively related to performance.

H5: Benevolence is positively related to performance.

H6: Moral leadership is positively related to performance.

H7: Innovation is positively related to performance.

H8: Authoritarianism negatively moderates the relationship between innovation and performance.

H9: Benevolence positively moderates the relationship between innovation and performance.

H10: Moral leadership positively moderates the relationship between innovation and performance.

2.6 Summary

Leadership is a critical factor in achieving success. The definitions of leadership are various. The development outcomes of leadership perspectives have been categorized differently in different times. Leadership competence or personal ability influence organizational performance. Some leadership styles are introduced in our study, such as democratic leadership, autocratic leadership**,** participative leadership, servant leadership, transformational leadership, transactional leadership, and paternalistic leadership. Paternalistic leadership is popular in Chinese businesses. The outlines of paternalistic leadership are introduced. Innovation could achieve competitive advantage and increase organizational performance. Innovation plays an important role in healthcare as well. Performance indicates the activities, operations and business processes of an enterprise. Different industries have different performance measures. Moreover, the relationship between leadership style, innovation, and performance has been discussed. Leadership behaviors have a greater influence on innovation. Innovation has been proved to be significant to firm performance. Leadership styles influence the organizational performance. Based on their relationships, the conceptual research model was built. The present study will answer three questions. The ten hypotheses were proposed.

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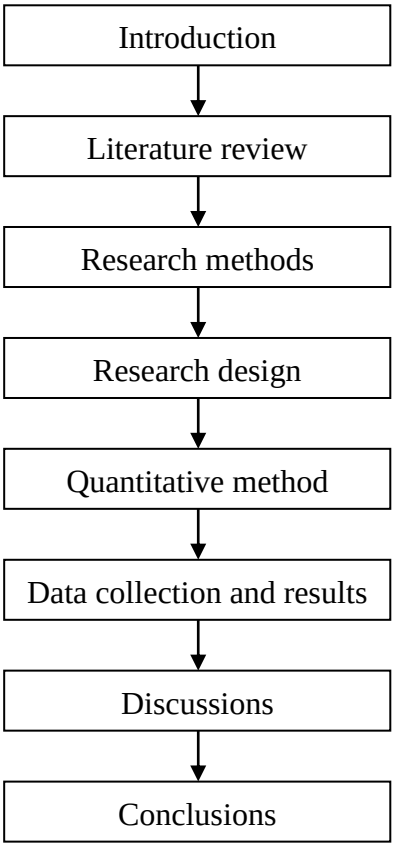
Chapter 3 - Research methods

Research method is essential to the completion of research. Teddlie and Tashakkori (2009) define research methods as specific strategies and procedures for implementing research design, including sampling, data collection, data analysis, and interpretation of the findings. Specific research methods are determined by the overall methodological orientations of researchers. This chapter presents research design, quantitative method, survey instrument, validity and reliability, sample, data collection, and data analysis.

3.1 Research design

The purpose of the study is to explore the relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals. The questionnaire is used for data collection, which consists of paternalistic leadership measurement, innovation measurement, performance measurement, and demographics. Quantitative methods may be most simply and parsimoniously defined as the techniques associated with the gathering, analysis, interpretation, and presentation of numerical information (Teddlie & Tashakkori, 2009). The quantitative research methods of the present study include questionnaire design, research questions and hypotheses, sample, data collection, data analysis, and validity and reliability. In general, the research procedures are shown in Figure 3-1.

Figure 3-1 The research procedures



Source: the author.

3.2 Quantitative method

In the research methods, quantitative research is often used for theory testing, requiring that the researcher maintain a distance from the research to avoid biasing the results (Cooper & Schindler, 2011). Quantitative research communicates variables in the form of questions to investigate the research problem. The objective of quantitative research is to examine the relationship between the independent variable and dependent variable (Creswell, 2002). Our study is to examine the relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals. Therefore, the quantitative research method is appropriate for the study.

3.3 Survey instrument

The survey instruments of the study consist of the paternalistic leadership measurement, innovation measurement, performance measurement, and demographics. We use these survey instruments to collect the data. Therefore, the questionnaires of the study include four parts. This section introduces paternalistic leadership measurement, innovation measurement, performance measurement, and demographics.

3.3.1 Paternalistic leadership measurement

The scale of paternalistic leadership adopted in this study is the three-element model developed by Cheng et al. (2000), including benevolent leadership, moral leadership, and authoritarian leadership. The versions of paternalistic leadership measurement are in both English and simplified Chinese (see Appendix A & Appendix B). Paternalistic leadership is measured by 18 items, including 6 items (From Q1 to Q6) about benevolent leadership, 4 items (From Q7 to Q10) about moral leadership, and 8 items (From Q11 to Q18) about authoritarian leadership (See Appendix C). These items are evaluated using a seven-point Likert scale (1=Strongly disagree, 2=Disagree, 3=Slightly disagree, 4=Neutral, 5=Slightly agree, 6=Agree, 7=Strongly agree).

3.3.2 Innovation measurement

In the study, we adopted the innovation performance measures provided by the prior studies (Wang & Ahmed, 2004; Matzler et al., 2008; Kmieciak et al., 2012) because the measures contain a number of innovative activities, such as innovativeness in product/service, management approaches, and business processes et cetera. Kmieciak et al. (2012) explore the effects of innovativeness and IT capability on firm performance in SMEs. The samples of their study are CEOs of 289 SMEs. Their research findings show that innovation activity has a positive effect on

subjective measures of firm performance. There are 9 items in the innovation measurement about competitors, and a seven-point Likert scale is used (1=Strongly disagree, 2=Disagree, 3=Slightly disagree, 4=Neutral, 5=Slightly agree, 6=Agree, 7=Strongly agree) to indicate the innovation performance. A Cronbach alpha above .70 is generally preferred (Nunnally, 1970). The Cronbach's alpha coefficient was reported in the previous research as 0.933, which provided evidence of high reliability. The versions of the innovation performance measurement are in both English and simplified Chinese (see Appendix D & Appendix E).

3.3.3 Performance measurement

Our study uses the Balanced Scorecard (BSC) to measure hospital performance. This section presents the introduction of the BSC and its applications in healthcare sector.

(1) Introduction of the BSC

Measures of organizational performance are various, but they can be generally divided into financial and non-financial measures (Simpson et al., 2012; Hakimpoor et al., 2012; Arshad, & Rasli, 2013). In the present study, both financial and non-financial measures are adopted. We use the BSC as the measurement of hospital performance.

The BSC is a tool for aligning business activities to the vision and strategy of the organization, improving internal and external communications, and monitoring organization performance against strategic goals (Bigliardi & Bottani, 2010). A strategic management system that builds around a BSC is characterized by three keywords: focus, balance and integration (Tsang et al., 1999). The BSC method is clear about what to do and what not to do (Chang et al., 2011). Figure 3-2 shows the scheme of the BSC model. There are four perspectives in the BSC model, including financial, customer, internal business processes, learning and growth. The BSC distinguishes the four different perspectives of performance measures:

(a) Financial. This perspective reflects the traditional need for financial data

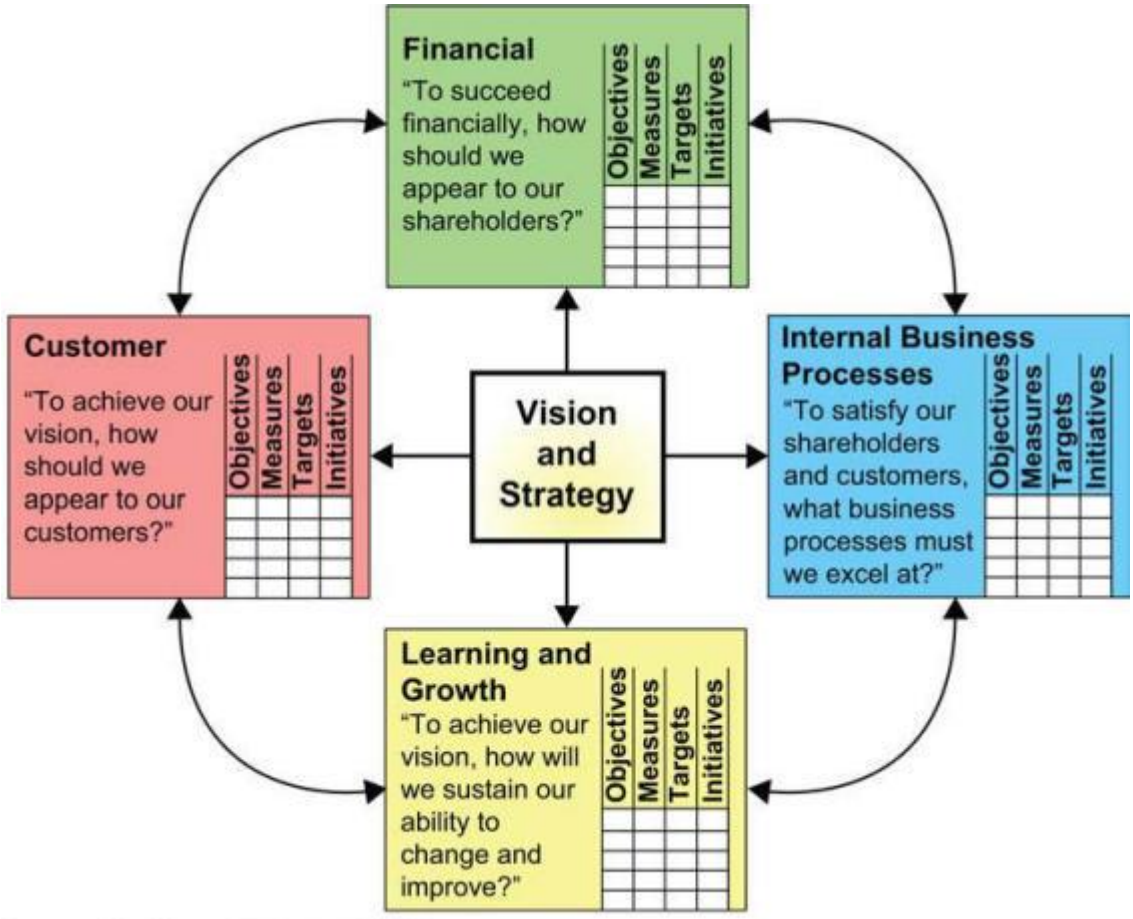
(Bigliardi & Bottani, 2010). The financial perspective aims at finding appropriate performance indicators and initiatives, and challenging goals that have a positive impact on the overall satisfaction of all stakeholders. The major questions here are the following: What budget guides our organization? What are the financial targets? What drives these targets? What revenue to achieve (Koumpouros, 2013)?

(b) Customer. Customer satisfaction is important in any business. If customers are not satisfied, they will eventually find other suppliers that will meet their needs (Bigliardi & Bottani, 2010). The basic questions under this perspective are: Who are the customers? What goals do we want to achieve with partners? How do we excite them? What is the target market? To achieve our vision, how should we appear to our customers? Some of the most relevant goals are to increase customer satisfaction, to improve customer retention, to acquire new customers, and to augment customer reliability (Koumpouros, 2013).

(c) Internal business processes. This perspective refers to internal business processes, and aims at satisfying shareholders and customers by excelling at some business processes (Bigliardi & Bottani, 2010). The main questions to be answered under this perspective are: To satisfy the stakeholders and customers what business processes must we excel at? What internal activities do we need to sustain our competencies (Koumpouros, 2013)?

(d) Learning and growth. This perspective is to create a long-term growth of the company, including employee training and corporate cultural attitudes related to both individual and corporate self-improvement (Bigliardi & Bottani, 2010). The goals under this perspective are developing the right infrastructure to guarantee the improvement in the long run (Koumpouros, 2013).

Figure 3-2 The scheme of the BSC model



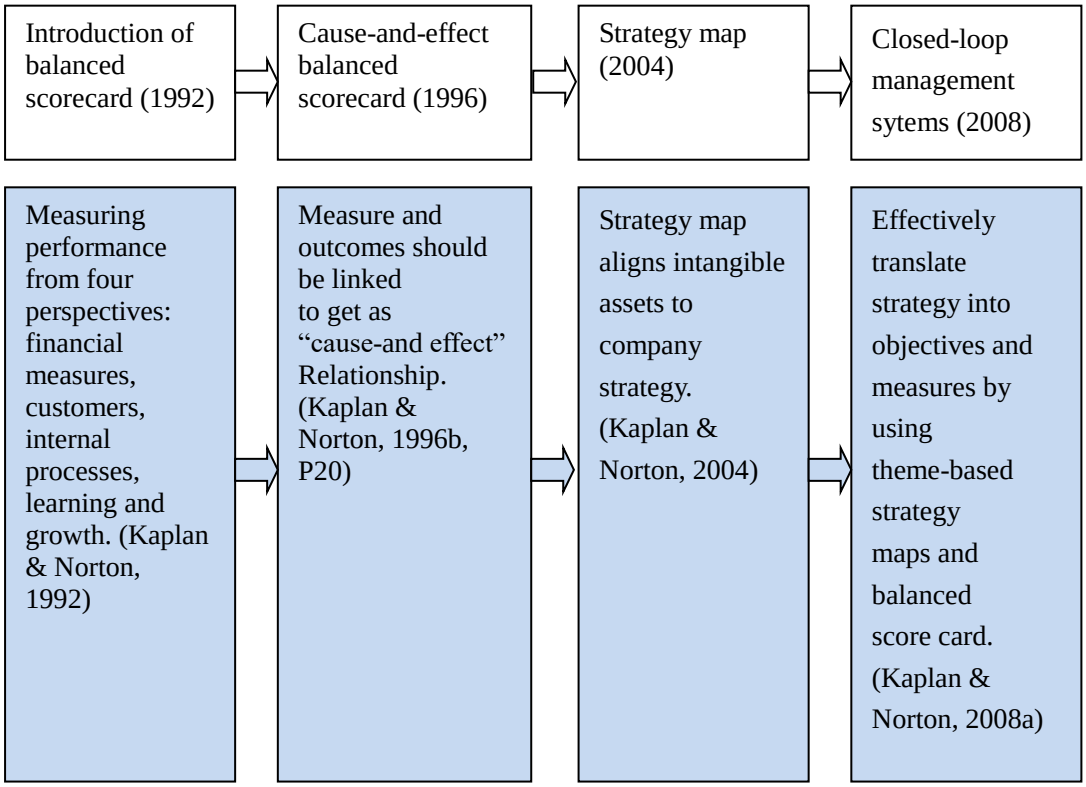
Source: Bigliardi and Bottani (2010, P.253)

The BSC measurement is carried out in three timescales – monthly, quarterly and yearly – depending on the measurements involved. The monthly measurement consists of only the customer perspective, the quarterly measurement includes finance and process perspectives, and the yearly measurements comprise the learning and growth perspective (Kumar et al., 2005).

The BSC was established by Kaplan and Norton in 1992. After that, the BSC is constantly developed. Based on the prior literature, Gurd and Gao (2007) summarize three different definitions of the evolution stages of BSC: all authors agree that the first generation BSC combines financial and non-financial indicators with the four perspectives (financial, customer, internal business process, and learning and growth); the second generation BSC emphasizes the cause-and-effect relationship between

measures and strategic objectives. It became a strategic management tool, usually utilizing a strategy map to illustrate the linkage between measures and strategies; the third generation BSC is about developing strategic control systems by incorporating destination statements and optionally two perspective strategic linkage models. Moreover, Zhang et al. (2012) describe the development of the BSC (see Figure 3-3).

Figure 3-3 The development of the balanced scorecard



Source: Zhang et al. (2012, p.866)

(2) Applications in healthcare sector

Performance of an organization is influenced by many financial and non-financial factors. Therefore, in the healthcare service, performance measurement methods emphasize consideration of multiple factors. Researchers have suggested use of various tools and techniques for healthcare performance measurement and management, such as the application of process reengineering, benchmarking, balanced score card, analytic hierarchy process (AHP), and Fuzzy theory (Dey et al., 2008). All of the above frameworks identify multiple factors for performance

evaluation, analyze them with the involvement of the concerned stakeholders, quantify performance parameters and suggest improvement measures. The BSC can be proved as a useful tool to guide strategy development and implementation in healthcare organizations; the use of the BSC facilitates hospitals' implementation of plans with multiple strategic goals (Koumpouros, 2013). Zhang et al. (2012) summarize the scholars supporting the BSC application in the health care context (see Table 3-1).

Table 3-1 Scholars supporting balance scorecard application in health care context

Year	Scholars	Main propositions and contributions
1995	Baker and Pink	First discuss the applicability of balanced scorecard in hospital
1998	Chow et al.	Balanced scorecard can be used by healthcare organizations to meet current challenges
2002	Inamdar et al.	Balanced scorecard can be successfully applied in the healthcare sector
2003a	Radnor and Lovell	Define, justify and implement the balanced scorecard in the national health service
2006	Schmidt et al.	Explain how a mental health trust delivers excellent performance using balanced scorecard
2006	Walker and Dunn	Improve hospital performance and productivity with the balanced scorecard
2009	Moullin	Implement the public sector scorecard (PSS)
2011	Kollberg and Elg	BSC is used as a tool for improving internal capabilities and supporting organizational development
2011	Tapinos et al.	Provide empirical evidence on how BSC utilization influences the strategy process

Source: Zhang et al. (2012, p.867)

Some researchers have applied the BSC to measure hospital performance in their studies. For instance, Chen et al. (2006) confirm the feasibility and value of using the BSC to measure performance in two hospitals in different countries. Their research findings show the BSC also reveal the hospitals' contribution to performance improvement of each country's total health system. They apply the 19 indicators of the BSC in their study (see Table 3-2). These indicators of the BSC are proved to be suitable for Chinese hospitals. Therefore, our study adapted these 19 indicators of the BSC. In the present study, a 5-point Likert-type scale (ranging from 1= Extremely bad performance to 5 = Excellent performance) was used to rate the hospital performance in the past year (see Appendix F). Chinese version of the BSC is in Appendix G.

Table 3-2 Using the BSC to measure hospital performance

Perspective	Indicators	Definition of calculation
Financial	Total profit margin	(Total operating revenue – total operating expenses) / total operating revenue
	Asset turnover	Total revenue / total assets
	Change of cost per case	(Reported year operating expense per discharge – preceding year operating expense per discharge) / reported year operating expense per discharge
	Personnel expenditure as a percent of total patient revenue	Total payments to staff / total patient revenue
	Material cost as a percent of total patient revenue	Costs of medical material and office expendable supplies / total patient revenue
Customer	Patient satisfaction	Number of patients expressing “satisfaction” in survey / total number of surveyed patients
	Outpatient waiting times	The time which elapses between the request by a patient for a consultant and attendance on the patient in a consultation room
Internal business process	Staff satisfaction	Number of staffs expressing “satisfaction” in surveys / total number of surveyed staff
	Staff turnover	Staff leaving the hospital in one year / total number of staff
	Length of stay	Total number of hospital stay / number of discharges
	Occupancy	Average daily census / beds in service
	Outpatients per year per doctor	Outpatients / year / doctors
	Emergency patients per year per doctor	Emergency patients / year / doctors
	Admitted inpatients per year per doctor	Admitted inpatients / year / doctors
	Mortality	Deaths / total number of admitted inpatients per year
	Medical accidents leading to law suit rate	Number of medical accidents leading to law suit a year / total number of admitted inpatients a year
Learning and growth	Expenditure on medical research	Expenditure on medical research / total operating revenue
	Academic papers written in English per year per medical staff member	Academic papers written in English which published in professional journal / number of medical staff
	Outpatient activity	Net outpatient revenue / net patient revenue

Source: Chen et al. (2006, p.345)

We consider the difficulty to collect valid data. Hence, both self-reported subjective financial and non-financial performance measures will be used in this study.

3.3.4 Demographics

The demographic characteristics of the sample in the study consist of hospital category, hospital size, hospital location, gender, age, education, major, number of years working in the current hospital as a CEO, and number of years working in the current hospital with other roles. The samples of our study focused on public hospitals. The categories of public hospitals mainly include the government, the university, and the army. Others types of hospitals refer to the public hospitals besides the public hospitals of the government, the university, and the army. Hospital size of the study depends on the number of beds of every hospital. We categorized the hospital size into three scales: 100 of total hospital beds ≤ 101 to 500 of total hospital beds, and >500 of total hospital beds. Hospital location refers to which city or province of China mainland the participants' hospital is located at.

The fourth part of the questionnaire is the demographics, a self-developed one in both English and simplified Chinese (see Appendix H & Appendix I). There were nine questions.

3.4 Validity and reliability

Validity and reliability are the major criteria for evaluating a measurement tool. Cooper and Schindler (2011) defined validity as whether a measure accomplishes its claims. The validity includes internal validity and external validity. Teddlie and Tashakkori (2009) identified internal validity as the validity of inferences about whether the relationship between two variables is causal. The internal validity of a hypothesized cause in an experiment is enhanced to the degree that plausible alternative explanations for the obtained results can be eliminated. External validity is concerned with the interaction of the experimental treatment with other factors and

the resulting impact on the ability to generalize to times, settings, or persons (Cooper & Schindler, 2011). On the other hand, reliability is concerned with estimates of the degree to which a measurement is free of random or unstable error. The reliability of the instruments can be used for assuring the confidence that transient and situational factors are not interfering (Cooper & Schindler, 2011). Partington (2002) defines reliability as the ability of a measurement instrument to produce the same answer in the same circumstances, time after time. The internal consistency or reliability of each measurement scale is estimated by a Cronbach alpha test with listwise deletion of missing cases. Field (2005) suggests Cronbach's Alpha is the most common measure of scale reliability. Although most scales are found reliable numerous times in previous studies, a Cronbach alpha test is performed on all scales using multiple items. The previous studies showed the different points of Cronbach alpha. For instance, Nunnally (1970) proposes a Cronbach alpha above 0.70 is generally preferred. Churchill (1979) recommends the Cronbach's Alpha measure of 0.60 is acceptable for a factor in exploratory research. The threshold of Item-to-Item correlations should be greater than 0.30; and the threshold of Item-to-Total correlations should be higher than 0.50 (Hair et al., 1998). Generally, these Cronbach's Alpha measures provide great reference value.

Based on the discussions on validity and reliability, we analyze the survey instrument of the study. Our survey instrument consists of paternalistic leadership measurement, innovation measurement, and the BSC. The scale of paternalistic leadership has been adopted by a large number of empirical studies in mainland and Taiwan, China (Chen, 2014). Hence, the scale has high variability and reliability. The validity of innovation measurement was tested in these studies (Wang & Ahmed, 2004; Matzler et al., 2008; Kmieciak et al., 2012). Furthermore, the Cronbach's alpha coefficient was 0.933. This ensures the scale has a very satisfactory degree of reliability. The contents of the measurement are suitable to our study. The BSC has been used for over 20 years after Kaplan and Norton developed this measure approach in 1992. The BSC overcomes the shortcomings of traditional performance measurement system because the BSC offers a superior combination of non-financial

and financial performance measures (Jusoh et al., 2008). According to the applications of the BSC, Khan et al. (2011) describe numerous studies have noted the prevalent adoption of the BSC in developed countries such as the USA, Canada, Europe, UK, and Australia, and the application of BSC evaluated in some emerging countries such as India, Malaysia, Egypt, Thailand, and China. In general, the validity and reliability of the survey instrument were satisfied for the study. More information of the validity and reliability is showed in Chapter 4.

3.5 Sample

Sampling involves selecting units of analysis (for example, people, groups, artifacts, settings) in a manner that maximizes the researcher's ability to answer research questions set forth in a study (Teddlie & Tashakkori, 2009). A sample examines a portion of the target population, and the portion must be carefully selected to represent that population (Cooper & Schindler, 2011). Our study did not use the pilot testing because these survey instruments have been used in the previous studies. What's more, the paternalistic leadership and the BSC survey instruments were already used in China. The samples were only collected from the public hospitals of China mainland. The CEOs of public hospitals were invited to participate in the study by self-report.

The demographic characteristics of the CEO also include hospital characteristics. In terms of demographics, the hospitals are categorized based on hospital category, hospital size, hospital location, gender, age, education, major, number of years working in the current hospital as a CEO, and number of years working in the current hospital with other roles. Table 3-3 shows the demographic statistics of the 103 responses.

Table 3-3 Frequency distributions of demographic characteristics

Dimension	N	Attribute	Frequency	Accumulation
Hospital category	93	The government	90.3%	90.3%
	10	Others	9.7%	100.0%
Hospital size	41	100 of total hospital beds ≤	39.8%	39.8%
	61	101 to 500 of total hospital beds	59.2%	99.0%
	1	＞500 of total hospital beds	1.0%	100.0%
Hospital location	42	Guangdong	40.8%	40.8%
	6	Guangxi	5.8%	46.6%
	6	Hunan	5.8%	52.4%
	4	Henan	3.9%	56.3%
	6	Hubei	5.8%	62.1%
	9	Jiangsu	8.7%	70.9%
	5	Zhejiang	4.9%	75.7%
	7	Fujian	6.8%	82.5%
	6	Jiangxi	5.8%	88.3%
	8	Sichuan	7.8%	96.1%
	4	Yunnan	3.9%	100%
Gender	100	Male	97.1%	97.1%
	3	Female	2.9%	100%
Age	4	36-40 years	3.9%	3.9%
	23	41-45 years	22.3%	26.2%
	48	46-50 years	46.6%	72.8%
	26	51-55 years	25.2%	98.1%
	2	56-60 years	1.9%	100%
Education	22	Bachelor	21.4%	21.4%
	75	Master	72.8%	94.2%
	6	Doctor	5.8%	100%
Major	84	Healthcare	81.6%	81.6%
	19	Management	18.4%	100%
Number of years working in the current hospital as a CEO	26	5 years≤	25.2%	25.2%
	58	6-10 years	56.3%	81.6%
	19	11-15 years	18.4%	100%
Number of years working in the current hospital with other roles	23	5 years≤	22.3%	22.3%
	9	6-10 years	8.7%	31.1%
	27	11-15 years	26.2%	57.3%
	27	16-20 years	26.2%	83.5%
	17	>20 years	16.5%	100%

Source: the author.

3.6 Data collection

In the present study, the 1,850 questionnaires were distributed by internet or in-person interviews in paper with the CEOs of the public hospitals in mainland China. Among the 1,850 questionnaires, only 2 questionnaires were distributed by in-person interviews in paper; others were distributed by internet. The survey period was about two months. Finally, we received 103 responses. The total response rate was only 5.6%. There are 31 direct-controlled municipalities and provinces in mainland China, but the samples were only from 11 provinces, which accounted for only 35.5% of the 31 direct-controlled municipalities and provinces.

The target of quantitative research is to collect data using reliable and valid measures from a representative sample of respondents (Partington, 2002). The type of quantitative data gathered dictates the analyses that can be performed and in turn the types of research question that can be answered. Teddlie and Tashakkori (2009) conclude that quantitative data collection strategies almost always include questionnaires, tests, and some forms of structured interview. We used the questionnaire to collect data in the study.

Questionnaires have traditionally involved paper-and-pencil methods for data collection, but the proliferation of personal computers has led to the internet as a popular data collection venue. Therefore, a major advantage of questionnaire is that researchers can mail or e-mail them to their respondents because mail surveys are less expensive than in-person interviews or questionnaires (Teddlie & Tashakkori, 2009). Although internet or mail surveys are less expensive than in-person interviews, the response rates of in-person interviews are higher than internet or mail surveys. In the study, the questionnaires were distributed by in-person interviews in paper, and by internet or mail to the CEOs of public hospitals.

3.7 Data analysis

Quantitative research involves the numerical analysis of data (Partington, 2002). Data analysis is conducted through a range of statistical, tabular, and graphical techniques. Cooper and Schindler (2011) state that data analysis usually involves reducing accumulated data to a manageable size, developing summaries, looking for patterns, and applying statistical techniques. In the present study, we used the reliability test, factor analysis, correlations and regression analysis. Moreover, the Windows version 22.0 SPSS (Statistical Product and Service Solutions) was used as statistical analysis tool.

3.8 Summary

The quantitative methods of the study include questionnaire design, research questions and hypotheses, validity and reliability, sample, data collection, and data analysis. The questionnaire design consists of paternalistic leadership measurement, innovation performance measurement, hospital performance measurement, and demographics. The samples are only adopted in China mainland. The CEOs of public hospitals were invited to participate in the study by self-report. The study used paternalistic leadership measurement, innovation measurement, performance measurement, and demographics to collect the data. The data analyses were conducted through reliability test, factor analysis, correlations and the regression analysis. Our study used the Windows version 22.0 SPSS as statistical analysis tool.

Chapter 4 - Results

This chapter is to present the results of data collection. The results include the descriptive statistics of paternalistic leadership measurement, innovation measurement, and performance measurement, the reliability test with factor analysis, and regression analysis.

4.1 Results of paternalistic leadership measurement

Our study adopted the three-element model developed by Cheng et al. (2000) to measure paternalistic leadership. Paternalistic leadership was measured by 18 items. These items were rated using a seven-point Likert scale (ranging from 1 = Strongly disagree to 7 = Strongly agree). Table 4-1 showed the results of paternalistic leadership measurement of the 103 responses.

Among the 103 responses, the highest percentage of each item was listed. For the level of “Slightly agree”, the percentage was 25.24%; the percentage was 36.89% for the level of “neutral”; the percentage was 44.66% for the level of “Slightly disagree”; the percentage was 53.4% for the level of “Strongly agree”; the percentage was 53.4% for the level of “Agree”; 25.24% of the respondents agree with item 6; 78.64% strongly agree with item 7; 66.99% of the respondents agree with item 8; and the percentage is 72.82% for item 9; 50.49% of the respondents strongly agree with item 10; 43.69% agree with item 11; 37.86% of the respondents slightly disagree with item 12; 57.28% strongly disagree with item 13; 54.37% of the respondents disagree with item 14; 49.51% of them strongly disagree with item 15; 33.01% of the respondents slightly agree with item 16; 30.1% slightly disagree with item 17; 51.46% of them agree with item 18. In summary, there were one Slightly disagree, one Neutral, one Slightly agree, two Agrees, and one Strongly agree in benevolence items from item 1 to item 6. Morality items from item 7 to item 10 had two Agrees and two

Strongly agrees. Authority items from item 11 to item 18 had one Slightly agree, two Agrees, two Slightly disagree, one Disagree, and two Strongly disagree. The results showed that most of the respondents agree with those items about morality. It is also true for items about benevolence. The majority of the respondents showed disagreement when it comes to items about authority. These results would influence regression analysis.

Table 4-1 Results of paternalistic leadership measurement

Item	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. I devote all my energy to taking care of our members.	3 (2.91%)	11 (10.68%)	15 (14.56%)	15 (14.56%)	26(25.24%)	24 (23.3%)	9 (8.74%)
2. I take good care of family members of our members as well.	6 (5.83%)	21 (20.39%)	22 (21.36%)	38 (36.89%)	12 (11.65%)	3 (2.91%)	1 (0.97%)
3. I will help our members when they are in an emergency.	0(0%)	0(0%)	2 (1.94%)	7 (6.8%)	35 (33.98%)	56 (54.37%)	3 (2.91%)
4. I try to understand what the cause is when members don not perform well.	0(0%)	0(0%)	0(0%)	0(0%)	2 (1.94%)	46 (44.66%)	55 (53.4%)
5. I will provide our members chances for correcting mistakes.	0(0%)	0(0%)	1 (0.97%)	5 (4.85%)	12 (11.65%)	55 (53.4%)	30 (29.13%)
6. I will not embarrass subordinates in public.	2 (1.94%)	11 (10.68%)	13 (12.62%)	25 (24.27%)	23 (22.33%)	26 (25.24%)	3 (2.91%)
7. I never shirk responsibility in front of working problems.	1 (0.97%)	2 (1.94%)	0(0%)	0 (0%)	1 (0.97%)	18 (17.48%)	81 (78.64%)
8. I do not use *guanxi* (personal relationship) or back-door practices to obtain illicit personal gains.	0(0%)	0(0%)	0(0%)	4 (3.88%)	2 (1.94%)	69 (66.99%)	28 (27.18%)
9. I do not use my authority to seek special privileges for myself.	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)	75 (72.82%)	28 (27.18%)

10. I act as an exemplar in work and personal conduct.	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)	51 (49.51%)	52 (50.49%)
11. I ask our members to obey my instructions completely.	1 (0.97%)	4 (3.88%)	10(9.71%)	1(0.97%)	12(11.65%)	45(43.69%)	30 (29.13%)
12. I will take revenge on our members if they express objection in public.	8(7.77%)	29(28.16%)	39(37.86%)	23(22.33%)	2(1.94%)	1(0.97%)	1(0.97%)
13. I make all decisions by myself in our hospital.	59(57.28%)	26(25.24%)	10(9.71%)	5(4.85%)	2(1.94%)	0(0%)	1(0.97%)
14. Our members will make a final decision on my opinion at the meeting.	24(23.3%)	56(54.37%)	15(14.56%)	3(2.91%)	3(2.91%)	1(0.97%)	1(0.97%)
15. I never leak my real thoughts to my members.	51(49.51%)	41(39.81%)	8(7.77%)	1(0.97%)	1(0.97%)	1(0.97%)	0(0%)
16. Our members feel pressured when working with me.	0(0%)	4(3.88%)	27(26.21%)	24(23.3%)	34(33.01%)	12(11.65%)	2(1.94%)
17. I scold my members when they cannot accomplish their tasks.	0(0%)	15(14.56%)	31(30.1%)	12(11.65%)	29(28.16%)	13(12.62%)	3(2.91%)
18. My members have to follow my rules to get things done. If not, I will punish them severely.	0(0%)	4(3.88%)	0(0%)	8(7.77%)	6(5.83%)	53(51.46%)	32(31.07%)

Notes: 1=Strongly disagree, 2= Disagree, 3=Slightly disagree, 4=Neutral, 5=Slightly agree, 6=Agree, 7=Strongly agree

Source: the author.

4.2 Results of innovation measurement

Our study adapted the innovation measurement used in prior studies **(**Wang & Ahmed, 2004; Kmieciak et al., 2012**)**. There were 9 items of innovation performance measures. These items were applied by using a seven-point Likert scale (ranging from 1= Strongly disagree to 7=Strongly agree) to indicate the innovation performance of respondents.

Table 4-2 Results of innovation measurement

Item	1	2	3	4	5	6	7
1. In new product / service introductions, our hospital is often first-to-market.	6 (5.83%)	26 (25.24%)	17 (16.5%)	11 (10.68%)	20 (19.42%)	20 (19.42%)	3 (2.91%)
2. In comparison with our competitors, our hospital has introduced more innovative products/ services during the past three years.	1 (0.97%)	18 (17.48%)	32 (31.07%)	9 (8.74%)	22 (21.36%)	20 (19.42%)	1 (0.97%)
3. Our new products / services are often perceived as highly innovative by customers.	0 (0%)	14 (13.59%)	46 (44.66%)	26 (25.24%)	15 (14.56%)	1 (0.97%)	1 (0.97%)
4. In comparison with our competitors, our hospital has introduced more innovative production or delivery methods during the past three years.	0 (0%)	0 (0%)	14 (13.59%)	26 (25.24%)	56 (54.37%)	6 (5.83%)	1 (0.97%)
5. New products/ services in our hospital often get us an edge on new competitors.	0 (0%)	0 (0%)	1 (0.97%)	0 (0%)	26 (25.24%)	59 (57.28%)	17 (16.5%)
6. Our hospital will introduce new services within a year.	0 (0%)	0 (0%)	18 (17.48%)	8 (7.77%)	42 (40.78%)	28 (27.18%)	7 (6.8%)
7. In new product/service introductions, our hospital is often at the cutting edge of technology.	0 (0%)	9 (8.74%)	37 (35.92%)	10 (9.71%)	29 (28.16%)	18 (17.48%)	0 (0%)
8. In comparison with our competitors, our marketing activity is original and novel.	4 (3.88%)	6 (5.83%)	39 (37.86%)	35 (33.98%)	16 (15.53%)	3 (2.91%)	0 (0%)
9. The number of new services this year is more than that of last year.	1 (0.97%)	1 (0.97%)	5 (4.85%)	3 (2.91%)	66 (64.08%)	27 (26.21%)	0 (0%)

Notes: 1=Strongly disagree, 2= Disagree, 3=Slightly disagree, 4=Neutral, 5=Slightly agree, 6=Agree, 7=Strongly agree

Source: the author.

Table 4-2 showed the results of innovation measurement from 103 respondents. The response of each item with the highest percentage was listed as follows: Disagree of item 1 was 25.24%; Slightly agree of item 2 was 31.07%; Slightly agree of item 3 was 44.66%; Slightly agree of item 4 was 54.37%; Agree of item 5 was 57.28%; Slightly agree of item 6 was 40.78%; Slightly disagree of item 7 was 35.92%; Slightly agree of item 8 was 37.86%; Slightly agree of item 9 was 64.08%. There were 1 Disagree, 1 Slightly disagree, 1 Agree, and 6 Slightly agrees. Slightly agree ranks the most in number among responses of items with the highest percentage.

4.3 Results of performance measurement

Based on Chen et al. (2006), our performance measurement adopted the 19 indicators of the BSC as the measurement tool. A 5-point Likert-type scale (ranging from 1=Extremely bad performance to 5=Excellent performance) was used to rate the hospital performance of last year. 103 responses showed the results of four perspectives of the BSC: financial perspective, customer perspective, internal business process perspective, and learning and growth perspective.

4.3.1 Financial perspective

Table 4-3 showed the results of financial performance measures of the last year, which included 5 items. The response of each item with the highest percentage was listed as follows: Good performance of item 1 was 66.99%; Average of item 2 was 54.37%; Average of item 3 was 60.19%; Average of item 4 was 81.55%; Average of item 5 was 53.4%.

Table 4-3 Results of financial measures

Item	1	2	3	4	5
1. Total profit margin of the last year	0(0%)	7(6.8%)	27(26.21%)	69(66.99%)	0(0%)
2. Asset turnover of the last year	0(0%)	35(33.98%)	56(54.37%)	11(10.68%)	1(0.97%)
3. Change of cost per case of the last year	0(0%)	2(1.94%)	62(60.19%)	39(37.86%)	0(0%)
4. Personnel expenditure as a percent of total patient revenue of the last year	0(0%)	3(2.91%)	84(81.55%)	16(15.53%)	0(0%)
5. Material cost as a percent of total patient revenue of the last year	0(0%)	6(5.83%)	55(53.4%)	42(40.78%)	0(0%)

Notes: 1= Extremely bad performance, 2=Bad performance, 3=Average, 4=Good performance, 5=Excellent performance

Source: the author.

4.3.2 Customer perspective

Table 4-4 showed the results of customer performance measures, which included 2 items. The response of each item with the highest percentage was listed as follows: Good performance of item 1 was 56.31%; Good performance of item 2 was 55.34%.

Table 4-4 Results of customer measures

Item	1	2	3	4	5
1. Patient satisfaction of the last year	0(0%)	3(2.91%)	42(40.78%)	58(56.31%)	0(0%)
2. Outpatient waiting times of the last year	1(0.97%)	8(7.77%)	32(31.07%)	57(55.34%)	5(4.85%)

Notes: 1= Extremely bad performance, 2=Bad performance, 3=Average, 4=Good performance, 5=Excellent performance

Source: the author.

4.3.3 Internal business process perspective

Table 4-5 showed the results of internal business process performance measures, which included 9 items. The response of each item with the highest percentage was listed as follows: Average of item 1 was 52.43%; Good performance of item 2 was 43.69%; Good performance of item 3 was 72.82%; Good performance of item 4 was 58.25%; Good performance of item 5 was 73.79%; Average of item 6 was 56.31%; Average of item 7 was 60.19%; Good performance of item 8 was 52.43%; Good performance of item 9 was 47.57%.

Table 4-5 Results of internal business process measures

Item	**1**	**2**	**3**	**4**	**5**
1. Staff satisfaction of the last year	0(0%)	3(2.91%)	54(52.43%)	46(44.66%)	0(0%)
2. Staff turnover of the last year	1(0.97%)	19(18.45%)	38(36.89%)	45(43.69%)	0(0%)
3. Length of stay of the last year	0(0%)	0(0%)	9(8.74%)	75(72.82%)	19(18.45%)
4. Occupancy of the last year	0(0%)	0(0%)	5(4.85%)	60(58.25%)	38(36.89%)
5. Outpatients per year per doctor of the last year	0(0%)	0(0%)	22(21.36%)	76(73.79%)	5(4.85%)
6. Emergency patients per year per doctor of the last year	0(0%)	0(0%)	58(56.31%)	44(42.72%)	1(0.97%)
7. Admitted inpatients per year per doctor of the last year	1(0.97%)	1(0.97%)	62(60.19%)	39(37.86%)	0(0%)
8. Mortality of the last year	1(0.97%)	8(7.77%)	34(33.01%)	54(52.43%)	6(5.83%)
9. Lawsuit rate caused by medical accidents of the last year	1(0.97%)	9(8.74%)	19(18.45%)	49(47.57%)	25(24.27%)

Notes: 1= Extremely bad performance, 2=Bad performance, 3=Average, 4=Good performance, 5=Excellent performance

Source: the author.

4.3.4 Learning and growth perspective

Table 4-6 showed the results of learning and growth performance measures, which included 3 items. The response of each item with the highest percentage was listed as follows: average of item 1 was 59.22%; average of item 2 was 43.69%; average of item 3 was 43.69%.

Table 4-6 Results of learning and growth measures

Item	1	2	3	4	5
1. Expenditure on medical research of the last year	2(1.94%)	22(21.36%)	61(59.22%)	18(17.48%)	0(0%)
2. Academic papers written in English/Chinese per year per medical staff member of the last year	17(16.5%)	41(39.81%)	45(43.69%)	0(0%)	0(0%)
3. Outpatient activity of the last year	0(0%)	10(9.71%)	45(43.69%)	43(41.75%)	5(4.85%)

Notes: 1=Extremely bad performance, 2=Bad performance, 3=Average, 4=Good performance, 5=Excellent performance

Source: the author.

The summary showed the results of the response of each item with the highest percentage in the four perspectives. Financial perspective had 1 Good performance and 4 Averages. Customer perspective had 2 Good performances. Internal business process perspective had 3 Averages and 6 Good performances. Learning and growth perspective had 3 Averages.

4.4 Reliability and validity test with factor analysis

The evaluation measurement requires a reliability and validity test in the study. Moreover, when the questionnaire is translated from English version into simplified Chinese version, we were concerned that this translation process could cause

deviations in the items understanding. We need to identify the consistency of the questionnaire between the English version and simplified Chinese version. By employing the reliability and validity test of paternalistic leadership, innovation, and performance measurements in the present study, factor analysis is needed in the process. Factor analysis is a technique for identifying groups of variables, which can be used to understand the structure of a set of variables and to reduce a data set to a more manageable size while retaining as much of the original information as possible (Field, 2005).

According to the discussions of the KMO scores, the KMO statistic varies between 0 and 1. A value close to 1 indicates that patterns of correlations are relatively compact and factor analysis should yield distinct and reliable factors (Field, 2005). In the KMO test, the accepting value should be greater than 0.5, of which values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great, and values above 0.9 are superb (Kaiser, 1974).

In the analysis approaches of our study, if no items are deleted, we will conduct the reliability analysis before the factor analysis; if items are deleted, we will conduct in sequence the reliability analysis, factor analysis, item removal, new factor analysis, and the final reliability analysis.

4.4.1 Paternalistic leadership measurement

In the results of reliability analysis, each item of paternalistic leadership measurement showed that the Cronbach' α value of benevolent leadership was 0.649; the Cronbach' α value of moral leadership was 0.672; the Cronbach' α value of authoritarianism leadership was 0.602; The average value of Cronbach' α of the three dimensions was over 0.6; And then we did the reliability analysis of paternalistic leadership subscales. The result showed that the Cronbach' α value was 0.637, which was also over 0.6. Considering the actual subjective factors of the respondents, the subscales of paternalistic leadership measurement shows excellent internal consistency.

Table 4-7 KMO and Bartlett's Test[a]- Paternalistic leadership

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.619
Bartlett's Test of Sphericity	Approx. Chi-Square	436.300
	df	153
	Sig.	.000

Source: the author.

We used KMO and Bartlett's test for the validity analysis of the subscales of paternalistic leadership measurement. The test results showed KMO value was 0.619; the significant level of Bartlett's test was 0.000, as shown in Table 4-7. The result showed that paternalistic leadership measurement was suitable for factor analysis.

Table 4-8 Rotated Component Matrix[a]- Paternalistic leadership

		Raw Component			Rescaled Component			Cronbach' α
		1	2	3	1	2	3	
Benevolence	Q1_1	1.204	-.198	.424	**.750**	-.123	.264	0.649
	Q1_2	.967	.089	.101	**.698**	.064	.073	
	Q1_3	.415	.020	.211	**.496**	.024	.253	
	Q1_4	.249	.041	.023	**.391**	.064	.037	
	Q1_5	.237	-.013	.024	**.256**	-.014	.026	
	Q1_6	1.083	-.311	-.103	**.689**	-.198	-.066	
Moral leadership	Q1_7	.520	.011	-.317	**.499**	.010	-.304	0.672
	Q1_8	.420	-.057	-.473	.427	-.058	**-.481**	
	Q1_9	.108	.050	-.061	**.227**	.105	-.128	
	Q1_10	.229	.036	-.035	**.423**	.068	-.064	
Authoritarianism	Q1_11	.267	.006	1.124	.185	.004	**.777**	0.602
	Q1_12	.289	.653	-.133	.267	**.603**	-.123	
	Q1_13	-.101	.681	.080	-.092	**.616**	.072	
	Q1_14	.068	.758	-.111	.062	**.691**	-.101	
	Q1_15	-.022	.505	-.084	-.023	**.534**	-.089	
	Q1_16	-.133	.484	.526	-.113	.413	**.448**	
	Q1_17	.003	.899	.493	.002	**.628**	.345	
	Q1_18	.161	-.151	.783	.138	-.130	**.673**	

Source: the author.

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

According to the size of the factor loadings, the factor loadings of Q1_5 and Q1_9 were too small; the factor loading of Q1_8 was negative on F3, and the factor loadings of F1 and F3 were large, as shown in Table 4-8. This cannot help explain the research question. Moreover, other variables of the distribution factor also did not conform to the categorization of the dimension. Therefore, we did the simplification of problems in the dimension to delete the items the follows, as shown in Table 4-9.

Table 4-9 The simplification dimension- Paternalistic leadership

Variable	Item
Benevolence	Q1_1
	Q1_2
	Q1_4
Moral leadership	Q1_8
	Q1_9
	Q1_10
Authoritarianism	Q1_12
	Q1_13
	Q1_14
	Q1_15

Source: the author.

After the items were deleted, we proceeded with the factor analysis again. The test results showed KMO value was 0.649; the significant level of Bartlett's test was 0.000, as shown in Table 4-10. The result showed that paternalistic leadership measurement was suitable for factor analysis.

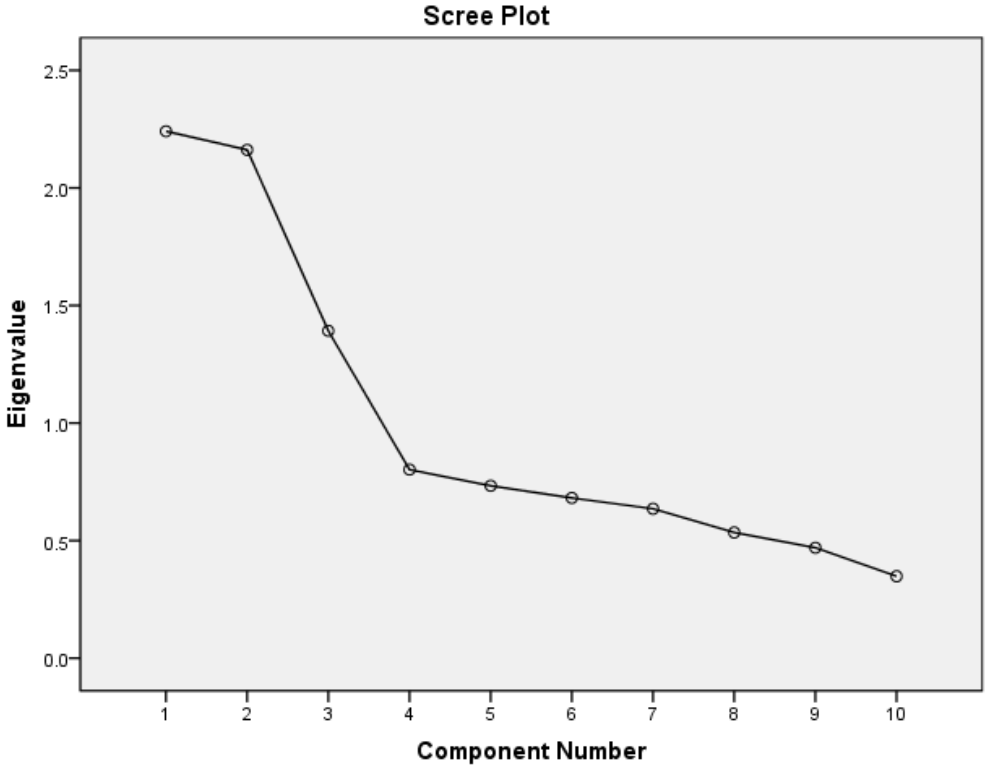
Table 4-10 KMO and Bartlett's Test- Paternalistic leadership measurement

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.649
Bartlett's Test of Sphericity	Approx. Chi-Square	185.421
	df	45
	Sig.	.000

Source: the author.

In Figure 4-1, compared with other factors, the first three ones bear relatively high values. Hence, we extracted the three factors to represent 57.953% of the total variance.

Figure 4-1 Scree plot- Paternalistic leadership



Source: the author.

Of the three extraction factors, the loading factors of Q1_1, Q1_2, and Q1_4 were larger in Factor 3 named benevolence leadership factor. The loading factors of

Q1_8, Q1_9, and Q1_10 were larger in Factor 2 named moral leadership factor. The loading factors of Q1_12, Q1_13, Q1_14, Q1_15 were larger in Factor 1 named authoritarianism leadership factor, as shown in Table 4-11.

Based on the analysis of new variables after items were deleted, the result showed that the Cronbach' α value of benevolent leadership was 0.562; the Cronbach' α value of moral leadership was 0.605; the Cronbach' α value of authoritarianism leadership was 0.703; the average value of Cronbach' α value of the three dimensions was over 0.6. And then we carried out the reliability analysis of paternalistic leadership subscales. The result showed that the Cronbach' α value was 0.553, which was also close to 0.6. Considering the actual subjective factors of the respondents, the subscales of paternalistic leadership measurement bore excellent internal consistency. Thus, paternalistic leadership measurement was of good reliability.

Table 4-11 Rotated Component Matrix[a]- Paternalistic leadership

Variable	Item	Component			Cronbach' α
		1	2	3	
Benevolence	Q1_1	-.131	.066	**.755**	
	Q1_2	.079	.028	**.760**	0.562
	Q1_4	.043	.114	**.683**	
Moral leadership	Q1_8	-.111	**.830**	.058	
	Q1_9	.137	**.803**	-.041	0.605
	Q1_10	.019	**.611**	.357	
Authoritarianism	Q1_12	**.621**	.241	.140	
	Q1_13	**.773**	-.190	-.095	0.703
	Q1_14	**.812**	-.060	.092	
	Q1_15	**.687**	.081	-.110	

Source: the author.

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

4.4.2 Innovation measurement

In the reliability analysis of each item of the innovation measurement, the result showed the Cronbach' α was 0.634, which was over 0.6. Considering the subjectivity of the answers and the sample size, the innovation measurement was of good reliability. And then we applied KMO and Bartlett's test for the validity analysis of innovation measurement. The test results showed that KMO value was 0.652; the significant level of Bartlett's test was less 0.0001, as shown in Table 4-12. The results showed the innovation measurement was suitable for factor analysis.

Table 4-12 KMO and Bartlett's Test- Innovation measurement

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.652
Bartlett's Test of Sphericity	Approx. Chi-Square	133.539
	df	36
	Sig.	.000

Source: the author.

Because the factor loadings of Q2_5, Q2_8, and Q2_9 were less than 0.5, thus, they could not fully reflect the innovation of the analysis. We deleted these items and conducted another reliability analysis and validity analysis. At this point, the variables of innovation included Q2_1, Q2_2, Q2_3, Q2_4, Q2_ 6, and Q2_7, as shown in Table 4-13.

Table 4-13 Component Matrix[a]-Innovation measurement

	Component
	1
Q2_1	.528
Q2_2	.580
Q2_3	.795
Q2_4	.618
Q2_5	.183
Q2_6	.507
Q2_7	.548
Q2_8	.314
Q2_9	.432
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Source: the author.

After deleting the items, we carried out the factor analysis again. Table 4-14 showed that KMO value was 0.671 and the significant level of Bartlett's test was less 0.0001. The results showed the innovation measurement was suitable for conducting factor analysis.

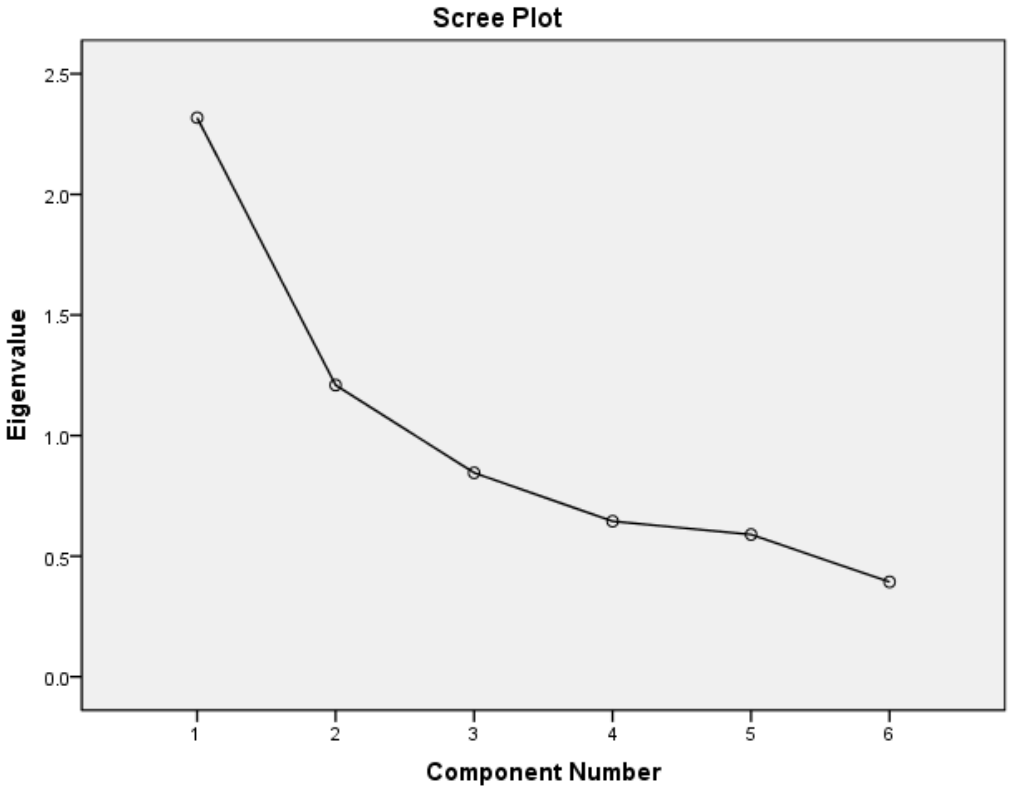
Table 4-14 KMO and Bartlett's Test-Innovation measurement

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.671
Bartlett's Test of Sphericity	Approx. Chi-Square	102.922
	df	15
	Sig.	.000

Source: the author.

We employed Principal Component Analysis in conformity with factor analysis. In Figure 4-2, the first factor bore quite larger values than the others. Hence, we extracted this factor to represent 38.672% of the total variance.

Figure 4-2 Scree Plot-Innovation measurement



Source: the author.

In Table 4-15, the factor loadings of Q2_1, Q2_1, Q2_1, Q2_1, Q2_1, Q2_1 in Factor 1 all bore large values. Hence, Factor 1 could be considered as innovation factor.

Table 4-15 Component Matrix[a]-Innovation measurement

Item	Component 1	Cronbach's Alpha
Q2_1	.581	
Q2_2	.613	
Q2_3	.805	0.642
Q2_4	.634	
Q2_6	.475	
Q2_7	.573	

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Source: the author.

After deleting the three items, we further conducted the reliability analysis of innovation. The result showed the Cronbach's Alpha was 0.642, which was over 0.6. Considering the subjectivity of the answers and the sample size, the innovation measurement was of good reliability. In Table 4-16, if the item was deleted, the average value of Cronbach's Alpha would be 0.599, which was close to 0.6. The result showed that the innovation measurement was of good reliability.

Table 4-16 Item-Total Statistics-Innovation measurement

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q2_1	21.05	13.478	.380	.169	.608
Q2_2	20.93	15.123	.336	.317	.617
Q2_3	21.40	15.516	.594	.417	.537
Q2_4	20.32	17.632	.407	.222	.601
Q2_6	19.89	17.194	.278	.171	.631
Q2_7	20.78	15.665	.371	.264	.599

Source: the author.

4.4.3 Performance measurement

In the performance measurement, we conducted the reliability analysis of the Question Groups 3, 4, 5 and 6 that correspond respectively to the BSC's four dimensions: financial, customer, internal business processes, and learning and growth. The result showed that Q3 (Financial) Cronbach' α was 0.765; Q4 (Customer) Cronbach' α was 0.711; Q5 (Internal business processes) Cronbach' α was 0.732; Q6 (Learning and growth) Cronbach' α was 0.696. The average Cronbach' α of Q3, Q4, Q5, and Q6 was over 0.6. Considering the actual subjective factors of the respondents, the performance measurements are in good internal consistency.

Table 4-17 showed that KMO value was 0.686 and the significant level of Bartlett's test was less 0.0001. The results showed the performance measurement was suitable for factor analysis.

Table 4-17 KMO and Bartlett's Test-Performance measurement

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.686
Bartlett's Test of Sphericity	Approx. Chi-Square	631.451
	df	171
	Sig.	.000

Source: the author.

We used Principal Component Analysis for conducting factor analysis. In the end, we extracted four common factors to represent 52.212% of the total variables. According to the size of the factor loadings, the factor loadings of Q5_3, Q5_4, and Q5_5 were large; the large factor loadings of other variables were in F2 and F4; and the factor loadings of part of variables were small, as shown in Table 4-18. Hence, other variables will be deleted except Q5_3, Q5_4, and Q5_5. The factor loading of Q6_ 3 in F2 was smaller than that of Q6_ 1 and Q6_ 2. Therefore, Q6_ 3 was chosen to be deleted.

Table 4-18 Rotated Component Matrix[a]-Performance measurement

Variable	Item	Component			
		1	2	3	4
Financial	Q3_1	**.734**	-.300	-.108	.018
	Q3_2	**.564**	-.169	-.116	-.205
	Q3_3	**.742**	.055	-.122	-.097
	Q3_4	**.745**	-.060	.020	.243
	Q3_5	**.723**	.051	-.142	-.004
Customer	Q4_1	-.365	**.641**	-.120	.258
	Q4_2	.036	**.627**	-.070	.264
Internal business processes	Q5_1	**-.428**	.331	.160	.382
	Q5_2	-.142	.055	.003	**.739**
	Q5_3	-.125	.036	**.808**	-.014
	Q5_4	-.153	.145	**.816**	.024
	Q5_5	-.098	-.078	**.667**	.095
	Q5_6	.005	-.122	.268	**.499**
	Q5_7	-.204	.165	-.269	**.568**
	Q5_8	.181	.083	-.084	**.640**
	Q5_9	.007	.022	.245	**.549**
Learning and growth	Q6_1	.000	**.741**	.239	-.093
	Q6_2	-.094	**.691**	-.044	-.120
	Q6_3	-.156	**.453**	.422	.117

Source: the author.

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Because the results of factor analysis were not suitable for the hypotheses, some items were deleted. Table 4-19 showed the new results as follows:

Table 4-19 The simplification dimension- Performance

Variable	Item
Financial	Q3_1
	Q3_2
	Q3_3
	Q3_4
	Q3_5
Customer	Q4_1
	Q4_2
Internal business processes	Q5_3
	Q5_4
	Q5_5
Learning and growth	Q6_1
	Q6_2

Source: the author.

Under the condition of these remaining items, we carried out another the factor analysis. Table 4-20 showed that KMO value was 0.714; the significant level of Bartlett's test was less than 0.0001. The result showed the performance measurement was suitable for factor analysis.

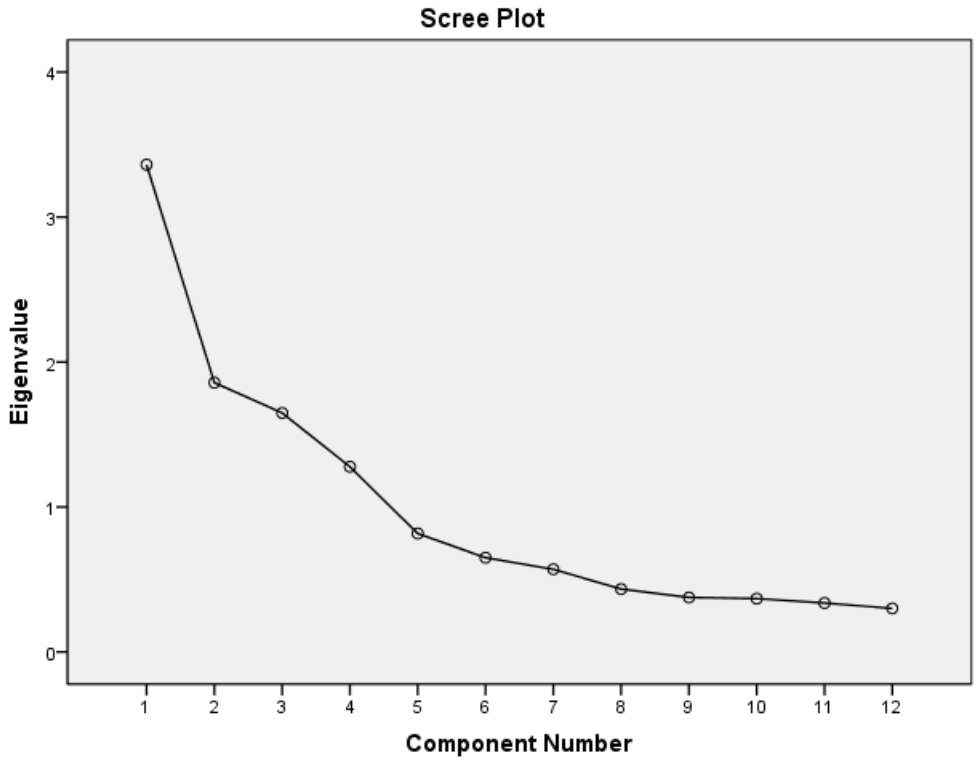
Table 4-20 KMO and Bartlett's Test-Performance measurement

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.714
Bartlett's Test of Sphericity	Approx. Chi-Square	361.113
	df	66
	Sig.	.000

Source: the author.

In Figure 4-3, the first four factors embraced larger values while others smaller ones. Hence, we extracted the four factors to represent 67.881% of the total variance.

Figure 4-3 Scree Plot-Performance measurement



Source: the author.

As Table 4-21 shows, the loading factors of Q3_1, Q3_2, Q3_3, Q3_4, Q3_5 were larger in Factor 1 named financial factor; the loading factors of Q4_1 and Q4_2 were larger in Factor 4 named customer factor; the loading factors of Q5_3, Q5_4 and Q5_5 were larger in Factor 2 named internal business process and the loading factors of Q6_1 and Q6_2 were larger in Factor 3 named learning and growth factor.

Table 4-21 Rotated Component Matrix[a]-Performance measurement

Variable	Item	Component				Cronbach's Alpha
		1	2	3	4	
Financial	Q3_1	**.755**	-.138	-.187	-.277	0.765
	Q3_2	**.581**	-.080	-.316	.034	
	Q3_3	**.741**	-.166	.222	-.244	
	Q3_4	**.750**	.023	-.181	.159	
	Q3_5	**.720**	-.119	.114	-.028	
Customer	Q4_1	-.318	-.044	.217	**.802**	0.711
	Q4_2	.094	.006	.058	**.909**	
Internal business process	Q5_3	-.113	**.831**	.087	-.037	0.732
	Q5_4	-.168	**.817**	.205	.001	
	Q5_5	-.046	**.730**	-.154	.024	
Learning and growth	Q6_1	.014	.248	**.800**	.232	0.696
	Q6_2	-.137	-.112	**.848**	.054	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Source: the author.

After the items were deleted, we repeated the reliability analysis of performance measurement again. The result showed the Q3 Cronbach's Alpha was 0.765; Q4 Cronbach's Alpha was 0.711; Q5 Cronbach's Alpha was 0.732; Q6 Cronbach's Alpha was 0.696; their average Cronbach's Alpha was 0.726, which was over 0.6. Considering the subjectivity of the answers and the sample size, the performance measurement was of good reliability.

We also made the overall reliability analysis of performance measurement. The Cronbach's Alpha was 0.372, which was small, but the Cronbach's Alpha of each part of the performance measurement was high. Hence, the performance measurement was still of fine reliability.

4.5 Regression analysis

Regression analysis is a statistical analysis method to determine the quantitative relationship between two or more variables, which are dependent on each other. The regression analysis of the study included paternalistic leadership and innovation, paternalistic leadership and performance, and innovation and performance. The ten hypotheses were as follows:

H1: Authoritarianism is negatively related to innovation.

H2: Benevolence is positively related to innovation.

H3: Moral leadership is positively related to innovation.

H4: Authoritarianism is negatively related to performance.

H5: Benevolence is positively related to performance.

H6: Moral leadership is positively related to performance.

H7: Innovation is positively related to performance.

H8: Authoritarianism negatively moderates the relationship between innovation and performance.

H9: Benevolence positively moderates the relationship between innovation and performance.

H10: Moral leadership positively moderates the relationship between innovation and performance.

In the reliability analysis of performance, the Cronbach's Alpha of each dimension was high, but the total Cronbach's Alpha was low. The results showed that each part of performance measurement was reliable, but the overall performance measurement was not reliable. Thus, each dimension of performance was used in the hypothesis test.

We dealt with the score first. The score of each dimension was taken from the mean value of its variable measurements, as seen in Table 4-22. Each dimension was converted into a variable.

Table 4-22 Descriptive Statistics- Regression analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Benevolence	103	2.67	7.00	4.8252	.93334
Moral leadership	103	4.33	7.00	6.2589	.52587
Authoritarianism	103	1.00	5.50	2.1432	.77063
Innovation	103	2.50	6.83	4.1456	.76721
Financial	103	1.80	4.20	2.7573	.42717
Customer	103	2.00	4.50	3.5437	.58203
Internal business processes	103	3.00	5.00	4.0841	.42194
Learning and growth	103	1.00	3.50	2.5971	.61858
Valid N (list wise)	103				

Source: the author.

We analyzed the correlation coefficient of these variables. As the Table 4-23 showed, these variables were highly correlated, presenting a positive correlation between benevolence leadership and innovation, moral leadership and innovation as well as moral leadership and internal business process. Besides, it also indicated a negative correlation between moral leadership and financial performance, innovation and financial performance, as well as financial performance and customer, internal business process, and learning and growth performance.

Table 4-23 Correlations-Regression analysis

		Benevolence	Moral leadership	Authoritarianism	Innovation	Financial	Customer	Internal business processes	Learning and growth
Benevolence	Pearson Correlation	1							
	Sig. (2-tailed)								
Moral leadership	Pearson Correlation	.220*	1						
	Sig. (2-tailed)	.026							
Authoritarianism	Pearson Correlation	-.009	.004	1					
	Sig. (2-tailed)	.927	.965						
Innovation	Pearson Correlation	.298**	.274**	.168	1				
	Sig. (2-tailed)	.002	.005	.089					
Financial	Pearson Correlation	-.165	-.282**	.063	-.289**	1			
	Sig. (2-tailed)	.096	.004	.524	.003				
Customer	Pearson Correlation	-.040	.123	-.192	-.042	-.201*	1		
	Sig. (2-tailed)	.689	.216	.052	.675	.041			
Internal business processes	Pearson Correlation	.137	.245*	-.153	.073	-.270**	.011	1	
	Sig. (2-tailed)	.167	.013	.123	.465	.006	.908		
Learning and growth	Pearson Correlation	-.120	-.008	-.122	.164	-.196*	.267**	.131	1
	Sig. (2-tailed)	.226	.938	.220	.097	.048	.006	.187	

*. Significant correlated at the 0.05 level (2-tailed).

**. Significant correlated at the 0.01 level (2-tailed).

Source: the author.

4.5.1 Paternalistic leadership and innovation

In the regression analysis of paternalistic leadership and innovation, the independent variable was each dimension of paternalistic leadership, which included authoritarianism, benevolence, and moral leadership; the dependent variable was innovation. According to the result of the regression analysis, the R Square was 0.163; the Adjusted R Square was 0.138, as seen in Table 4-24. The regression equation could be used to explain 13.8% of the total variance. And the P value of F test was 0.001, which was less than 0.05. The result showed F test was of great significance. Hence, paternalistic leadership had a significant positive impact on innovation.

Table 4-24 Regression between paternalistic leadership and innovation

	Model 1
Benevolence	.206*
Moral leadership	.318**
Authoritarianism	.169*
R^2	.163
Adjusted R^2	.138
F	6.431***

*P<=0.10, **p<=0.05, ***p<=0.001

Source: the author.

The standardized regression coefficient (Beta) of benevolence and moral leadership were, respectively, 0.251 and 0.218, while the P value of them respectively, was 0.009 and 0.023, both less than 0.05. However, the standardized regression coefficient (Beta) of authoritarianism was 0.170 and its P value was 0.068, which was over 0.05. Therefore, both benevolence and moral leadership had a significant positive impact on innovation, while authoritarianism presented slightly instead of significant positive regression influence on innovation. In H1, H2, and H3 hypotheses,

we propose that both benevolence and moral leadership are positively related to innovation as against the proposed negative correlation between authoritarianism and innovation. Hence, H2 and H3 were supported by the result while H1 was denied.

4.5.2 Paternalistic leadership and performance

In the regression analysis of paternalistic leadership and performance, the independent variable was each dimension of paternalistic leadership, which included authoritarianism, benevolence, and moral leadership; the dependent variable was performance, which included financial, customer, internal business processes, and learning and growth perspectives. We respectively performed the regression analysis of paternalistic leadership to financial, customer, internal business process, and learning and growth perspectives. Table 4-25 showed the result of regression between paternalistic leadership and performance

Table 4-25 Regression between paternalistic leadership and performance

Model	1	2	3	4
Performance	Financial	Customer	Internal business processes	Learning and growth
Benevolence	-.049		.039	
Moral leadership	-.210**		.182**	
Authoritarianism	.035		-.084	
R^2	.095	.057	.091	.030
Adjusted R^2	.067	.028	.063	.001
F	3.451**	1.996	3.287**	1.022

*P<=0.10, **p<=0.05, ***p<=0.001

Source: the author.

In the regression analysis of paternalistic leadership to financial perspective, the R Square was 0.095; the Adjusted R Square was 0.067, as seen in Table 4-25. The regression equation could be applied to explain 6.7% of the total variance. F test was 3.451; P value was 0.019, which was less than 0.05. The model showed a significant correlation. The standardized regression coefficient (Beta) of benevolence and authoritarianism were -0.107 and 0.508, respectively, with their corresponding P

value equal to 0.276 and 0.064, both of which were over 0.05. The standardized regression coefficient (Beta) of moral leadership was -0.259 with its P value equal to 0.010, which was less 0.05. The results showed that authoritarianism and benevolence were not significantly correlated to financial while moral leadership had a significant negative impact on financial. In the hypotheses, we propose that authoritarianism is negatively related to performance and benevolence and moral leadership are positively related to performance. Hence, paternalistic leadership did not have a significant impact on financial perspective of performance.

In the regression analysis of paternalistic leadership to customer, that the R Square was 0.057; the Adjusted R Square was 0.028. The regression equation could explain 2.8% of the total variance. F test was 1.996. P value was 0.120, which was over 0.05. The model showed no significant correlation. Hence, paternalistic leadership did not have a significant impact on customer perspective of performance.

In the regression analysis of paternalistic leadership to internal business processes, the R Square was 0.091. The Adjusted R Square was 0.063. The regression equation could be used to explain 6.3% of the total variance. F test was 3.287. P value was 0.024, which was less than 0.05. The model showed a significant correlation. The standardized regression coefficient (Beta) of benevolence and authoritarianism was 0.086 and 0.113, respectively, with their corresponding P value equal to 0.382 and -0.153, both of which were over 0.05. The standardized regression coefficient (Beta) of moral leadership was 0.226 and its P value was 0.023, which was less 0.05. Thus, it could be seen that benevolence and internal business processes were positively correlated, but not in a significant way. Moral leadership presented a significant positive regression influence on internal business processes while authoritarianism held a slightly negative correlation to internal business processes. Thus, only moral leadership of paternalistic leadership had a significant positive regression impact on internal business processes.

In the regression analysis of paternalistic leadership to learning and growth, the R Square was 0.030, the Adjusted R Square was 0.001 and F test was 1.022. P value was 0.386, which was over 0.05. The model showed no significant correlation. Hence,

paternalistic leadership did not have a significant impact on learning and growth of performance.

In the regression analysis of paternalistic leadership to each dimension of performance, there only moral leadership presented a significant positive regression impact on internal business processes of performance while others presented no significant influence. In this case, the final result of the regression analysis of paternalistic leadership to performance was not clear. Therefore, we further did the whole regression analysis of paternalistic leadership to performance. Table 4-26 showed that the R Square was 0.050 and the Adjusted R Square was 0.021.

Table 4-26 Model Summary- Paternalistic leadership and performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.223[a]	.050	.021	.21455

a. Predictors: (Constant). Authoritarianism, benevolence, moral leadership

Source: the author.

We found that the regression equation could be adopted to work out 2.1% of the total variance. And the P value was 0.168, which was over 0.05, as seen in Table 4-27. The result showed F test showed no significant correlation. Thus, paternalistic leadership did not have a significant impact on performance. In this case, H4, H5 and H6 were not supported by the result.

Table 4-27 Anova[a]- Paternalistic leadership and performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.237	3	.079	1.719	.168[b]
	Residual	4.557	99	.046		
	Total	4.795	102			

a. Dependent Variable: performance

b. Predictors: (Constant). Authoritarianism, benevolence, moral leadership

Source: the author.

4.5.3 Innovation and performance

In the regression analysis of innovation and performance, the independent variable was innovation and the dependent variable was performance, which included financial, customer, internal business processes, and learning and growth perspectives. We respectively carried out the regression analysis of innovation to financial, customer, internal business processes, and learning and growth perspectives. Table 4-28 showed the result of regression between innovation and performance

Table 4-28 Regression between innovation and performance

Model	1	2	3	4
Performance	Financial	Customer	Internal business processes	Learning and growth
Innovation	-.161**			
R^2	.083	.002	.005	.027
Adjusted R^2	.074	-.008	-.005	.017
F	9.201**	.177	.538	2.807*

*P<=0.10, **p<=0.05, ***p<=0.001

Source: the author.

In the result of the regression analysis of innovation to financial perspective, the R Square was 0.083 and the Adjusted R Square was 0.074, as seen in Table 4-28. The regression equation could be used to explain 7.4% of the total variance. F test was 9.201. P value was 0.003, which was less 0.05. Thus, the model showed a significant correlation. The standardized regression coefficient (Beta) of innovation was -0.289 and its P value was 0.003, which was less 0.05. Thus, it could be seen that innovation had a significant negative impact on the financial perspective.

The result of the regression analysis of innovation to customer perspective indicated that the R Square was 0.002, the Adjusted R Square was -0.008, F test was

0.177 and P value was 0.657, which was over 0.05. Thus, the model showed no significant correlation.

The result of the regression analysis of innovation to internal business processes showed that the R Square was 0.005, the Adjusted R Square was -0.005, F test was 0.538 and P value was 0.465, which was over 0.05. Thus, the model showed no significant correlation.

The result of the regression analysis of innovation to learning and growth presented that the R Square was 0.027, the Adjusted R Square was 0.017, F test was 2.807 and P value was 0.097, which was over 0.05. Thus, the model showed no significant correlation.

Based on the above analysis, the results showed that the models of innovation and customer, internal business processes, and learning and growth perspectives were not significantly correlated. It turned out that innovation held a significant negative impact on financial, contrary to the hypothesis that innovation is positively related to performance. Thus, H7 was not supported by the result.

4.5.4 Paternalistic leadership, innovation, and performance

The regression analysis of paternalistic leadership, innovation and performance is to test the hypotheses of H8, H9, and H10. The analysis focuses on the moderation effects of authoritarianism, benevolence, and moral leadership of paternalistic leadership to innovation, and each dimension of performance. In order to test the moderation effects, we have to centralize the independent variable and the moderator and to compute a new variable that corresponds to the interaction.

(1) Authoritarianism, innovation, and performance

This section is to test whether authoritarianism negatively moderates the relationship between innovation and each dimension of performance. Table 4-29 presented the results of regression between authoritarianism, innovation, and performance.

Table 4-29 Regression between authoritarianism, innovation, and performance

Performance	Financial		Customer		Internal business processes		Learning and growth	
Model	1	2	3	4	5	6	7	8
Innovation_c	-.172**	-.180**						
Authoritarianism _c	.064	.059						
Innocxauthorc		.019						
R^2	.096	.098	.037	.058	.033	.061	.050	.056
Adjusted R^2	.078	.071	.018	.030	.014	.032	.031	.028
F	5.335**	3.595**	1.912	2.047	1.728	2.129	2.637*	1.975

*P<=0.10, **p<=0.05, ***p<=0.001

Source: the author.

In regression analysis of authoritarianism, innovation, and financial, the result showed that the R Square of Model 1 was 0.096; the Adjusted R Square of Model 1 was 0.078; the R Square of Model 2 was 0.098 and the Adjusted R Square of Model 2 was 0.071, as seen in Table 4-29. F test of model 1 was 5.335; its P value was 0.006, which was less than 0.05; F test of model 2 was 3.595; its P value was 0.016, which was less 0.05. The model showed a significant correlation. Moreover, the standardized regression coefficient (Beta) of innocxauthorc was 0.046 and the P value of T test was 0.656, which was over 0.05. T test showed no significant correlation. As seen from the result, the moderation effect of authoritarianism on innovation and each dimension of performance was not obvious.

The result of the regression analysis of authoritarianism, innovation, and customer showed that the R Square of Model 1 was 0.037; the Adjusted R Square of Model 1 was 0.018; the R Square of Model 2 was 0.058; the Adjusted R Square of Model 2 was 0.030; F test of model 1 was 1.912, and its P value was 0.153, which

was over 0.05; F test of model 2 was 2.047, and its P value was 0.112, which was over 0.05. Thus, the model showed no significant correlation.

The result of the regression analysis of authoritarianism, innovation, and internal business processes indicated that the R Square of Model 1 was 0.033; the Adjusted R Square of Model 1 was 0.014; the R Square of Model 2 was 0.061; the Adjusted R Square of Model 2 was 0.032; F test of model 1 was 1.728; its P value was 0.183, which was over 0.05; F test of model 2 was 2.129 and its P value was 0.101, which was over 0.05. Hence, the model showed no significant correlation.

The result of the regression analysis of authoritarianism, innovation, and learning and growth presented that the R Square of Model 1 was 0.050; the Adjusted R Square of Model 1 was 0.031; the R Square of Model 2 was 0.056; the Adjusted R Square of Model 2 was 0.028; F test of model 1 was 2.637; its P value was 0.077, which was over 0.05; F test of model 2 was 1.975 and its P value was 0.123, which was over 0.05. Therefore, the model showed no significant correlation.

In summary, the results showed that authoritarianism did not exert a significant moderation effect on innovation and financial; the models of authoritarianism, innovation, and other dimensions of performance all showed insignificant correlation. Thus, authoritarianism did not negatively moderate the relationship between innovation and performance in the study. Therefore, H8 was not supported by the result.

(2) Benevolence, innovation, and performance

This section is to test whether benevolence positively moderates the relationship between innovation and performance. Table 4-30 presented the results of regression between benevolence, innovation, and performance.

Table 4-30 Regression between benevolence, innovation, and performance

Performance	Financial		Customer		Internal business processes		Learning and growth	
Model	1	2	3	4	5	6	7	8
Innovation_c	-.147**	-.162**						
Benevolence_c	-.040	-.038						
Innocxbenec		.052						
R^2	.090	.101	.003	.050	.020	.043	.058	.060
Adjusted R^2	.072	.073	-.017	.021	.000	.014	.040	.032
F	4.964**	3.690**	.129	1.747	1.019	1.471	3.105**	2.107

*P<=0.10, **p<=0.05, ***p<=0.001

Source: the author.

Through the regression analysis of benevolence, innovation, and financial, the result presented that the R Square of Model 1 was 0.090; the Adjusted R Square of Model 1 was 0.072; the R Square of Model 2 was 0.101; the Adjusted R Square of Model 2 was 0.073; F test of model 1 was 4.964; its P value was 0.009, which was less 0.05; F test of model 2 was 3.690 and its P value was 0.014, which was less 0.05, as shown in Table 4-30. The model showed a significant correlation. Furthermore, the standardized regression coefficient (Beta) of innocxbenec was 0.105. The P value of T test was 0.291, which was over 0.05. T test was show insignificant correlation. The result showed the moderation effect of benevolence on innovation and financial showed no significant correlation.

Through the regression analysis of benevolence, innovation, and customer, the result presented that the R Square of Model 1 was 0.003; the Adjusted R Square of Model 1 was -0.017; the R Square of Model 2 was 0.050; the Adjusted R Square of Model 2 was 0.02; F test of model 1 was 0.129; the P value was 0.879, which was

over 0.05; F test of model 2 was 1.747 and the P value was 0.162, which was over 0.05. The model showed no significant correlation.

Through the regression analysis of benevolence, innovation, and internal business processes, the result presented that the R Square of Model 1 was 0.020; the Adjusted R Square of Model 1 was 0.000; the R Square of Model 2 was 0.043; the Adjusted R Square of Model 2 was 0.014; F test of model 1 was 1.019; the P value was 0.356, which was over 0.05; F test of model 2 was 1.471 and the P value was 0.227, which was over 0.05. The model showed no significant correlation.

Through the regression analysis of benevolence, innovation, and learning and growth, the result presented that the R Square of Model 1 was 0.058; the Adjusted R Square of Model 1 was 0.040; the R Square of Model 2 was 0.060; the Adjusted R Square of Model 2 was 0.032; F test of model 1 was 3.105; the P value was 0.049, which was less 0.05; F test of model 2 was 2.107 and the P value was 0.104, which was over 0.05. Thus, the model showed no significant correlation.

In summary, the results showed that benevolence did not exert a significant moderation effect on innovation and financial; the models of benevolence, innovation, and other dimensions of performance all showed insignificant correlation. Thus, benevolence did not positively moderate the relationship between innovation and performance in the study. H9 was not supported by the result.

(3) Moral leadership, innovation, and performance

This section is to test whether moral leadership positively moderates the relationship between innovation and performance. Table 4-31 presented the results of regression between moral leadership, innovation, and performance.

Through the regression analysis of moral leadership, innovation, and financial, the result presented that the R Square of Model 1 was 0.128; the Adjusted R Square of Model 1 was 0.111; the R Square of Model 2 was 0.141; the Adjusted R Square of Model 2 was 0.115, as seen Table 4-31. And F test was 5.399 and the P value was 0.002, which was less than 0.05. Thus, the model showed a significant correlation. Furthermore, the standardized regression coefficient (Beta) of innocxmoralc was

0.119. The P value of T test was 0.230, which was over 0.05. T test showed no significant correlation. Therefore, the result showed insignificant moderation effect of moral leadership on innovation and financial.

Table 4-31 Regression between moral leadership, innovation, and performance

Performance	Financial		Customer		Internal business processes		Learning and growth	
Model	1	2	3	4	5	6	7	8
Innovation_c	-.127**	-.145**			.003	.027	.145*	.198**
Moral_c	-.178**	-.153*			.195**	.162*	-.067	-.141
Innocxmoralc		.123				-.163		-.362**
R^2	.128	.141	.021	.034	.060	.083	.030	.082
Adjusted R^2	.111	.115	.002	.005	.041	.055	.011	.055
F	7.336***	5.399**	1.086	1.168	3.181**	2.968**	1.549	2.966**

*P<=0.10, **p<=0.05, ***p<=0.001

Source: the author.

Through the regression analysis of moral leadership, innovation, and customer, the result showed that the R Square of Model 1 was 0.021; the Adjusted R Square of Model 1 was 0.002; the R Square of Model 2 was 0.034; the Adjusted R Square of Model 2 was 0.005; F test of model 1 was 1.086; P value of model 1 was 0.342, which was over 0.05; F test of model 2 was 1.168 and P value of model 2 was 0.326, which was over 0.05. The model showed no significant correlation.

Through the regression analysis of moral leadership, innovation, and internal business processes, the result showed that the R Square of Model 1 was 0.060; the Adjusted R Square of Model 1 was 0.041; the R Square of Model 2 was 0.083; the Adjusted R Square of Model 2 was 0.055; F test of model 1 was 3.181; P value of model 1 was 0.046, which was less 0.05; F test of model 2 was 2.968 and P value of model 2 was 0.036, which was less 0.05. The model showed a significant correlation.

Furthermore, the standardized regression coefficient (Beta) of innocxmoralc was -0.159. The P value of T test was 0.121, which was over 0.05. Thus, T test showed no significant correlation. The Beta showed negative correlation. Thus, the result showed insignificant moderation effect of moral leadership on innovation and internal business processes.

In the regression analysis of moral leadership, innovation, and learning and growth, the result showed that the R Square of Model 1 was 0.030; the Adjusted R Square of Model 1 was 0.011; the R Square of Model 2 was 0.082; the Adjusted R Square of Model 2 was 0.055; F test was 2.966; P value of F test was 0.036, which was less 0.05. As it could be seen, the model showed a significant correlation. Furthermore, the standardized regression coefficient (Beta) of innocxmoralc was -0.242. The P value of T test was 0.019, which was less than 0.05. So T test showed a significant correlation. Therefore, the result showed insignificant moderation effect of moral leadership on innovation and learning and growth.

In summary of the regression analysis of moral leadership, innovation, and each dimension of performance, the results showed that the model of moral leadership, innovation, and customer showed no significant correlation. And moral leadership had no significant moderation effects on innovation, financial and internal business processes while held significant negative correlation with innovation, and learning and growth, which was contrary to the hypothesis that moral leadership positively moderated the relationship between innovation and performance in the study. Thus, H10 was not supported by the result.

4.6 Summary of the chapter

The result also presented four components of the questionnaire, including paternalistic leadership measurement, innovation measurement, performance measurement, and demographics.

The reliability and validity test set with factor analysis was done for paternalistic leadership, innovation, and performance measurements. The result showed that the

factor structures of these measurements were constructive for the study, and were in conformity with the original idea. The regression analyses of the study included paternalistic leadership and innovation, paternalistic leadership and performance, and innovation and performance. Of the ten hypotheses, only two hypotheses (H2, H3) were supported by the results of the regression analyses while the rest of eight were denied (H1, H4, H5, H6, H7, H8, H9, H10).

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Chapter 5 - Discussions

This chapter is to present the discussions of hypothesis test, the evaluation of research model, and the discussions of the relationship between the hypotheses and demographics. Based on the results of the regression analysis, the specific analysis will be shown in the following discussions.

5.1 Discussions of hypothesis test

The purpose of the present study was to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. There were 10 hypotheses in our study. The regression analysis of Chapter 4 showed the results of the hypothesis test, as shown in Table 5-1.

Table 5-1 Results of hypothesis test

H	Hypotheses	Status
H1	Authoritarianism is negatively related to innovation.	Not Supported
H2	Benevolence is positively related to innovation.	Supported
H3	Moral leadership is positively related to innovation.	Supported
H4	Authoritarianism is negatively related to performance.	Not Supported
H5	Benevolence is positively related to performance.	Not Supported
H6	Moral leadership is positively related to performance.	Not Supported
H7	Innovation is positively related to performance.	Not Supported
H8	Authoritarianism negatively moderates the relationship between innovation and performance.	Not Supported
H9	Benevolence positively moderates the relationship between innovation and performance.	Not Supported
H10	Moral leadership positively moderates the relationship between innovation and performance.	Not Supported

Source: the author.

The results of the hypothesis test supported only two hypotheses and denied the rest of eight hypotheses. The discussions of the 10 research hypotheses are showed as follows:

H1: Authoritarianism is negatively related to innovation.

The result of the regression analysis of paternalistic leadership and innovation showed that the standardized regression coefficient (Beta) of authoritarianism was 0.170, representing a positive correlation, and the P value of authoritarianism was 0.068, which was over 0.05. Thus, the result showed there was no significant positive correlation between authoritarianism and innovation, which was in contrast to the hypothesis. Thus, H1 was not supported by the result. Fan and Cheng (2000) describe authoritarianism leaders assert strong authority and control over subordinates and demand unquestioned obedience from subordinates. Amid the organization atmosphere of authoritarian leadership, subordinates do not dare to express their innovative ideas and become accustomed to obey the command of leaders, feeling lazy about innovative thinking. Authoritarianism will weaken the innovative enthusiasm of subordinates and then stifle their innovative ideas. Hence, authoritarianism has a negative impact on innovation. According to Fu et al. (2013), authoritarianism has a directly negative effect on exploitative innovation. But the result of regression analysis showed that authoritarianism had a positive impact on innovation, of which there were three main reasons: firstly, as authoritarianism is affected by cultural factors (Hofstede, 1993) and different cultures could result in different subordinate reactions, thus, authoritarianism exerts not merely negative effects on subordinates in the eastern culture context (Zhang et al., 2009); secondly, it was possible that respondents did not present their truthful answers when they filled out the authoritarianism part of the questionnaire, in order to beautify their own image of leadership behavior; thirdly, perhaps respondents did not fully understand all the information mentioned in the items of the questionnaire, such as the information of their competitors in the innovation measurement.

H2: Benevolence is positively related to innovation.

In the regression analysis of paternalistic leadership and innovation, the result

showed that the standardized regression coefficient (Beta) of benevolence was 0.251, representing a significant positive correlation and the P value of benevolence was 0.009, which was less than 0.05. The result was in line with the hypothesis. Thus, H2 was supported by the result. Benevolence has a positive impact on subordinates: for instance, benevolence leaders concern their subordinates' personal and family well being, which contributes to improve the working enthusiasm and satisfaction of subordinates. Besides, benevolence encourages subordinates to think creatively, as it can be more tolerant of differences and conflicts, leaving more room for exploring innovative ideas. Research findings of Fu et al. (2013) show that benevolence has a direct positive effect both on exploratory innovation and exploitative innovation. Therefore, benevolence is a positive factor for innovation. The status of H2 was consistent to results of the previous empirical studies conducted by Fan and Zheng (2000), Zhang et al. (2009).

H3: Moral leadership is positively related to innovation.

The standardized regression coefficient (Beta) of moral leadership was 0.218, representing a significant positive correlation and P value of moral leadership was 0.023, which was less than 0.05. The result was in consistent with the hypothesis. Thus, H3 was supported by the result. Generally, leadership has a significant impact on innovation. DiLiello and Houghton (2006) identify leadership agenda is central to innovation promotion. In Chapter 4, the result of regression analysis showed that paternalistic leadership had a significant positive impact on innovation. Moral leadership has the charisma to attract subordinates to follow their leaders to improve the organization's working style, such as thinking from different angles, overcoming challenges in the current working mode and looking for more creative solutions. Leaders with moral leadership demonstrate superior personal virtues, self-discipline, and unselfishness (Fan & Cheng, 2000). Thus, moral leadership is an active factor to innovation, being conducive to stimulate subordinate enthusiasm.

H4: Authoritarianism is negatively related to performance.

In the regression analysis of paternalistic leadership and each dimension of performance, the results showed that the standardized regression coefficient (Beta) of

authoritarianism and financial was 0.064, representing a positive correlation but not in a notable way and the P value was 0.508, which was over 0.05.The result was contrary to the hypothesis. The model of paternalistic leadership and customer of performance showed no significant correlation. Hence, authoritarianism did not have a significant impact on customer. The standardized regression coefficient (Beta) of authoritarianism and internal business processes was -0.153 and the P value was 0.113, which was over 0.05. Thus, authoritarianism had a negative regression influence on internal business processes, but not in a notable way. And the model of paternalistic leadership and learning and growth showed no significant correlation. Hence, authoritarianism did not have a significant impact on learning and growth. In summary, authoritarianism did not exert a significant impact on performance. Thus, H4 was not supported by the result. Authoritarian leaders require subordinates to be under the absolute control and show unconditional obedience. Subordinates usually show their more fear and obedience to the authoritarian behavior of their leaders, but less working enthusiasm for work. The falling internal motivation will directly affect their work performance. But the previous empirical studies showed different results of the relationship between authoritarianism and performance. For example, Gao et al. (2014) find that authoritarianism has a negative impact on team performance in their research of exploring the impact of paternalistic leadership on team performance. According to Yu et al. (2014), their research findings showed that paternalistic leadership had a significant positive relationship with performance. And authoritarianism and performance were not significantly related.

H5: Benevolence is positively related to performance.

Benevolent leaders show consideration for subordinate individuals and their families. Subordinates are easy to feel grateful for a kind leader, who offers care in their work and life, and thus, they will work harder in return for the leader’s care. In addition, benevolent leaders are more tolerant and supportive to subordinates, which will help improve team members' psychological security, enhance the team interaction and motivate team work enthusiasm. All these are beneficial for improving organizational performance. According to Yu et al. (2014), their research findings

show that both paternalistic leadership and benevolence have a significant positive relationship with performance. Gao et al. (2014) examine the relationship between paternalistic leadership and team performance, concluding that benevolence has a positive impact on team performance.

In the regression analysis of paternalistic leadership and each dimension of performance, the results showed that the standardized regression coefficient (Beta) of benevolence and financial was -0.107, representing a negative correlation but not in a notable way. And the P value was 0.276, which was over 0.05. The model of paternalistic leadership and customer showed no significant correlation. Hence, benevolence did not have a significant impact on customer. The standardized regression coefficient (Beta) of benevolence and internal business processes was 0.086, representing a positive correlation but not in a notable way. And the P value was 0.382, which was over 0.05. The model of paternalistic leadership and learning and growth showed no significant correlation. Hence, benevolence did not have a significant impact on learning and growth. In summary, the results showed that benevolence and performance were not significantly correlated. Thus, H5 was not supported by the result.

H6: Moral leadership is positively related to performance.

Leaders advocating moral leadership set as a good example in his/her excellent personal integrity and accomplishment for subordinates. Subordinates are likely to appreciate and emulate such kind of leaders, whose personal virtues help create a fair team atmosphere and motivate team members to work hard. As such, moral leadership can significantly improve team performance. According to Gao et al. (2014), moral leadership has a positive impact on team performance. And research findings of Yu et al. (2014) also show that there was a significant positive relationship between paternalistic leadership and performance as well as moral leadership and performance.

In the regression analysis of paternalistic leadership and each dimension of performance, the results showed that the standardized regression coefficient (Beta) of moral leadership and financial was -0.259, representing a negative correlation. And the P value was 0.010, which was less than 0.05. The model of paternalistic leadership

and customer showed no significant correlation. Hence, moral leadership did not have a significant impact on customer. The standardized regression coefficient (Beta) of moral leadership and internal business processes was 0.226, representing a significant positive correlation. And the P value was 0.023, which was less than 0.05. Thus, the model of paternalistic leadership and learning and growth showed no significant correlation. Hence, moral leadership did not have a significant impact on learning and growth. In summary, moral leadership had a significant negative impact on financial, which is in contrast to the hypothesis. The result showed that only moral leadership had a significant positive impact on internal business processes. Furthermore, results of the whole regression analysis of paternalistic leadership and performance showed that paternalistic leadership did not have a significant impact on performance. Only moral leadership had a significant positive impact on internal business processes and a less significant positive impact on performance. In other words, moral leadership did not have a significant positive impact on the whole performance. Therefore, H6 was not supported by the result. The result was also opposite to the research findings of previous studies, such as that of Yu et al. (2014).

H7: Innovation is positively related to performance.

In the regression analysis of innovation and each dimension of performance, the results showed that the standardized regression coefficient (Beta) of innovation and financial was -0.289, representing a significant negative correlation. The P value was 0.003, which was less than 0.05. This is in contrast to the hypothesis. The models of innovation and customer, internal business processes, and learning and growth perspectives showed no significant correlation. Therefore, innovation did not have a significant positive impact on the each dimension of performance. Thus, H7 was not supported by the result.

Innovation can be a critical strength of organizations in improving performance (DiLiello & Houghton, 2006). Normally, innovation is proved as a significant positive factor for performance improvement in the previous literature. For instance, Caccia-Bava et al. (2009) suggest that hospitals can perform better in operations through innovation. But the result of this study was not correspondent to that of the

previous empirical studies. Some reasons can account for the result of H7: firstly, the respondents may not fully understand all the information mentioned by every item of the questionnaire, and thus, the answers may not truly reflect their thoughts and behaviors; secondly, the questions of the innovation measurement part involve the information of the respondents' competitors. Thus, if respondents do not know well the information of their competitors, they may choose wrong answers of the questionnaire; thirdly, the incomprehensive questionnaire design and inadequate sample size may also affect the result.

H8: Authoritarianism negatively moderates the relationship between innovation and performance.

Authoritarianism as a moderating variable has been examined in the previous studies. For example, Fu et al. (2013) analyze the impact of paternalistic leadership on innovation. The results show that authoritarianism does not have the positive moderating effect on the relationship between exploratory innovation and new product performance as well as the negative moderating effect between exploitative innovation and new product performance. In the study, the regression analysis of authoritarianism, innovation, and each dimension of performance showed that the standardized regression coefficient (Beta) of innocxauthorc was 0.046, showing no significant moderating effect of authoritarianism on innovation and financial. And the P value was 0.656, which was over 0.05. The models of authoritarianism, innovation, and other dimensions of performance all showed no significant correlation. Thus, H8 was not supported by the result.

H9: Benevolence positively moderates the relationship between innovation and performance.

Fu et al. (2013) examine benevolence as the moderating variable to the relationship of innovation and new product performance. The results show that benevolence negatively or positively moderates the relationship between exploratory innovation and new product performance and that benevolence positively moderates the relationship between exploitative innovation and new product performance. In our study, the result of the regression analysis of benevolence, innovation, and each

dimension of performance showed that the standardized regression coefficient (Beta) of innocxbenec was 0.105, showing no significant moderating effect of benevolence on innovation, and financial. The P value was 0.291, which was over 0.05. Therefore, the models of benevolence, innovation, and other dimensions of performance all showed no significant correlation. Thus, H9 was not supported by the result.

Moreover, in the regression analysis of paternalistic leadership and innovation, the result showed that benevolence had a significant positive impact on innovation. In the regression analysis of paternalistic leadership and performance, the result showed that benevolence did not have a significant impact on performance. In the regression analysis of innovation and performance, innovation did not have a significant impact on performance. Certainly, all these had an influence on the result of H9.

H10: Moral leadership positively moderates the relationship between innovation and performance.

In the previous literature, the interaction of leadership, innovation, and performance has been discussed. Leadership has a significant impact on organizational performance (Paladan, 2012; Lam & O'Higgins, 2012). Kmieciak et al. (2012) confirm that innovation can improve performance and leadership has a positive effect on innovation. Fu et al. (2013) analyze the impact of paternalistic leadership on innovation in their empirical study. They also propose authoritarianism and benevolence as moderating variables to innovation and performance. Thus, in this study, moral leadership was proposed as a moderating variable to innovation and performance.

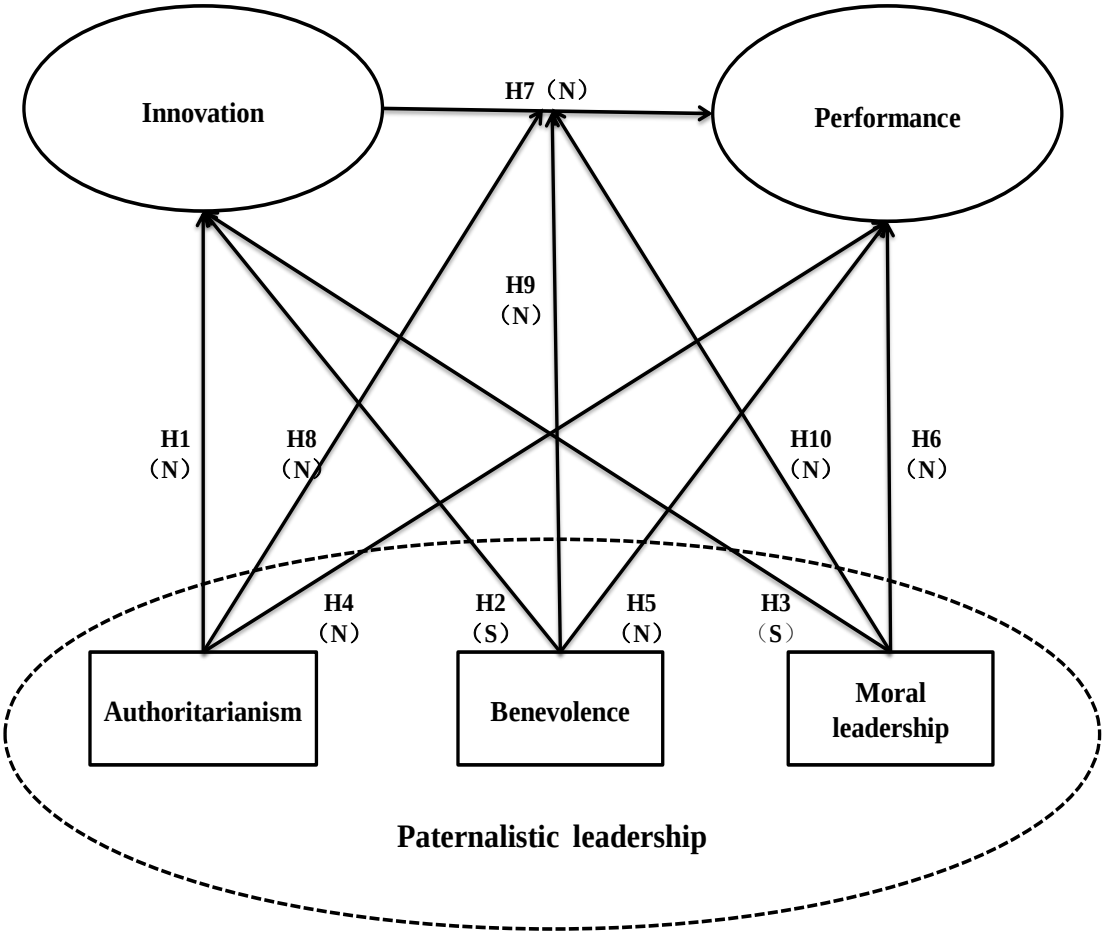
In the regression analysis of moral leadership, innovation, and each dimension of performance, the results showed that the model of moral leadership, innovation, and customer showed no significant correlation. The moderation effects of moral leadership on innovation, and other dimensions of performance all were not significant. Thus, H10 was not supported by the result. Furthermore, other factors could also influence the result of H10. For instance, in the regression analysis of paternalistic leadership and innovation, the result showed that moral leadership had a significant positive impact on innovation. In the regression analysis of paternalistic

leadership and performance, the result showed that moral leadership had a significant positive regression influence on internal business processes of performance. In the regression analysis of innovation and performance, innovation did not have a significant impact on performance.

5.2 Evaluation of research model

The primary conceptual model was built in Chapter 2. The purpose of the present study was to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. We proposed ten hypotheses to test their relationships, including the relationship between paternalistic leadership and innovation, the relationship between paternalistic leadership and performance, the relationship between innovation and performance, as well as paternalistic leadership as the moderating variable to innovation and performance. In the Chapter 4, the regression analysis showed the result of the hypothesis test. Therefore, the primary conceptual research model was evaluated. Figure 5-1 presented the final research model.

Figure 5-1 The final conceptual research model



Notes: S=Supported, N= Not supported

Source: the author.

5.3 Discussions of the relationship between the hypotheses and demographics

The questionnaire of our study consisted of four parts, including paternalistic leadership measurement, innovation measurement, performance measurement, and demographics. There were ten hypotheses of our study. The contents of hypothesis test examined the relationship between paternalistic leadership and innovation, the

relationship between paternalistic leadership and performance, the relationship between innovation and performance, and paternalistic leadership as the moderating variable to innovation and performance. The results of hypothesis test support only two hypotheses and denied the rest of eight. Besides, the results of the hypothesis test were closely related to the demographics. Thus, the impacts of demographics on the hypothesis test were as follows:

5.3.1 Hospital type

There were four options of hospital types in the questionnaire, including the government hospital, the university hospital, the army hospital, and others. Of 103 answers, the government hospital accounted for 90.3%, the university and army hospital hit 0% and others took up 9.7%. Thus, our samples were only from the hospitals of the government and others. In other words, there were no any samples from hospitals of the university and the army. Furthermore, the hospitals of the government occupied 90.3% of the total sample, which meant our samples mainly consisted of central hospitals, township hospitals, and district hospitals. The hospitals of others accounted for only 9.7%, possibly including some public-private-partnership or private hospitals.

Thus, our study focused on the samples of public hospitals. There were 90.3% samples from the government, which met the requirements of our study. We also notice that CEOs of public hospitals have the following three obvious characteristics: first, they do not need to be completely responsible for the financial results, unlike the CEOs of the private enterprises; second, they do not have the complete right of human resource to manage their subordinates; third, they do not know how long their tenure will last in the current hospitals. All these characteristics determined, to a large extent, their attitude to their jobs, as well as their work performance. On the other hand, these characteristics also influenced their consideration in filling out the questionnaire. Thus, the answers of our questionnaire would have an impact on the result of the hypothesis test.

5.3.2 Hospital size

Big hospitals would have more resources to gain the competitive advantages in the market, such as innovation, medical equipment, medical expert groups, hospital size, etc. These advantages will determine the position of a hospital in the market. In the questionnaire of the study, we designed three scales of hospital size. Of 103 answers in terms the number of total hospital beds, beds equal to 100 or less accounted for 39.8%; beds between 101 and 500 took up 59.2% and beds over 500 occupied only 1%. The result showed that our samples were mainly from the middle and small hospitals, which accounting for 99% of the total samples. Certainly, CEOs from these hospitals were in so large numbers that their answers of the questionnaire would affect the result of the study.

5.3.3 Hospital location

There were 31 direct-controlled municipalities and provinces of Chinese mainland to be selected in terms of their hospital location in our questionnaire. But the samples were only from 11 provinces, of which Guangdong accounted for 40.8%, Guangxi 5.8%, Hunan 5.8%, Henan 3.9%, Hubei 5.8%, Jiangsu 8.7%, Zhejiang 4.9%, Fujian 6.8%, Jiangxi 5.8%, Sichuan 7.8% and Yunnan 3.9%. It turned out that the samples mainly came from Guangdong instead of 31 direct-controlled municipalities and provinces. On the other hand, there are over 10 thousands public hospitals in Chinese mainland. But our samples only covered 93 public hospitals. Thus, our sample size was too small. All these factors would influence the regression result.

5.3.4 Gender

Male and female have different natural characteristics, which result in their different leadership behavior and their different answers to the answers of the questionnaire. Of the 103 respondents, male occupied 97.1%, while female only 2.9%. Certainly, different proportion of male to female respondents of the questionnaire would lead to different results. Hence, different gender proportion of the

questionnaire will cause different results of the regression analysis.

5.3.5 Age

Our study categorized the age demographic factor into eight groups: no more than 30 years old, 31 to 35 years old, 36 to 40 years old, 41 to 45 years old, 46 to 50 years old, 51 to 55 years old, 56 to 60 years old, and more than 60 years old. Of 103 answers in terms of the age demographic, four respondents were between 36 and 40 years old, accounting for 3.9%; 23 between 41 and 45 for 22.3%, 48 between 46 and 50 for 46.6%, 26 between 51 and 55 for 25.2%, two between 56 and 60 for 1.9% and no respondent over 60. The CEOs were manly from 41 to 55 years old, which took up 94.1% of 103 respondents. CEOs between 41 to 55 will have more work experience than those less than 41, and thus, it will be easier to understand the questions of our questionnaire.

5.3.6 Education

The 103 samples of the survey showed that CEOs with a bachelor degree accounted for 21.4% and those with a master degree took up 72.8%. The postgraduate topped th**e** largest group in terms of different educational levels. Graduates ranked the second and those with a doctorate ranked the third. All these CEO respondents of the survey had already received their diplomas and those who were learning corresponding programs were not included. The result illustrated that CEOs in our study were of high educational level, which contributed to their easy understanding of the questions of the questionnaire.

5.3.7 Major

Of the 103 answers in terms of the major of CEOs, the healthcare maior accounted for 81.6%, which topped the first among all the majors provided and matched their jobs. The management major took up 18.4%. The proportion of the majors of these CEO was probably related to their professions. CEOs having different

majors would have different answers to the questions of our questionnaire. Therefore, if the proportion of the healthcare and management major changes in the questionnaire, the result of our questionnaire would also be different. On the other hand, the result also presented that CEOs lacked the education background of managerial knowledge and skills, such as the knowledge of finance, human resource management and leadership (Zhao, 2011, p.20).

5.3.8 Number of years working in the current hospital as a CEO or other roles

The longer a CEO works in the current hospital, the more he or she understands the hospital and its competitors. If a CEO understands well the hospital and its competitors, he or she will be easy to answer the questions of our questionnaire. According to the number of years working in the current hospital as a CEO, of 103 answers, those who worked no more than 5 years accounted for 25.2%, 6 to 10 years for 56.3% and 11 to 15 years for 18.4%. The reasons for the result would be as follows: firstly, CEOs were from the current hospitals they work; secondly, because public hospitals belong to the government, some CEOs may come from other hospitals to their current hospitals halfway. Besides, some CEOs may not be able to work in the same hospital till they retire, because of the possibility of being transferred to other hospitals or units. Hence, all these may account for the reason why no CEOs had worked 6 to 10 years or over 20 years in the same current hospital. According to the number of years working in the current hospital as other roles for a CEO, of 103 answers, no more than 5 years took up 22.3%, 6 to 10 years 8.7%, 11 to 15 years 26.2%, 16 to 20 years 26.2% and over 20years 16.5%. Normally, CEOs were likely to come from other hospitals or unites if they worked in the current hospitals as other roles less than 5 years. On the contrary, it could prove that CEOs came from the current hospitals if they worked in the current hospital as other roles for a longer period.

5.4 Summary

The purpose of the present study was to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. We proposed ten hypotheses of the study. The results of the hypothesis test supported two hypotheses and denied the rest of eight. We discussed the ten hypotheses in this chapter and evaluated the primary conceptual research model, based on the regression result and worked out the final research model. We also discussed the impact of the demographic factors on the hypotheses.

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Chapter 6 - Conclusions

The chapter presents the conclusion of all chapters, the answers of research questions, the research findings, the limitations and the recommendations of the study, and the summary of each chapter.

6.1 Summary of all chapters

There are six chapters in our study, which are in sequence the Introduction, Literature review, Research methods, Results, Discussions, and Conclusions. The summaries of each chapter are as follows.

6.1.1 Chapter 1 Introduction

There are eight sections in Chapter 1, including research background, research questions, purpose of the study, overview of the literature, research methods, limitations of the study, structure of the study, and the summary of the chapter.

Research background is important for understanding research problems and research purpose. The research background of our study introduces the situation of Chinese public hospitals, CEOs of Chinese public hospitals, and the problems and challenges of Chinese public hospitals. Of 12 types of medical institutions in China, public hospitals belong to the government, the universities, and the army at different levels. There are five different levels of government hospitals in China, including the central, provincial, municipal, county, and township ones. Due to historical reasons, all hospitals in Chinese mainland were stated-owned from 1949 to 1979 until Chinese government permitted individual doctors to practice medicine in 1980. In terms of the CEOs of Chinese public hospitals, some characteristics are shared in common among them; for instance, they are appointed by the government, have no complete right of finance and human resource management, and a majority lack education background

of managerial knowledge and skills. Hence, CEOs do not need to be completely responsible for finance and human resource results of their hospitals.

Generally, CEOs face the difficulties and challenges presented by the system, environment, and management, which will influence the hospital development, as well as the hospital performance. Leadership is viewed as one of the key driving forces for improving organizational performance. Innovation is also a critical element for improving hospital performance. Therefore, we are interested in researches on the relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals. But we find there are inadequate studies on evaluating this relationship. Hence, a knowledge gap appears: *There lacks enough studies on evaluating the relationship between paternalistic leadership of CEOs, innovation, and performance in Chinese public hospitals.*

Based on suggestions given on the relationship between paternalistic leadership, innovation, and performance, we propose three questions of the study. The purpose of the present study is to explore the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals as the previous literature mainly presented the discussions of leadership, innovation, performance, and their relationships. As for the research methods, quantitative study was adopted in the present study. Some limitations of the study are stated and the outlines of the six chapters are shown as well in introducing the structure of the study.

6.1.2 Chapter 2 Literature review

There are six sections in the chapter, the first five of which including *Leadership*, *Innovation*, *Performance measures*, *Leadership style, innovation, and performance*, and *Research model, questions, and hypotheses*. The last section summarizes this chapter.

Leadership is a critical factor for success. But it is not easy to define leadership. The concept of leadership has been defined and redefined in various ways for years. For instance, the components of leadership have been given many definitions, referring to one’s position, personality, responsibility, behaviors, the influence process,

an instrument for achieving a goal,, consequence of interaction or some other meanings (Limsila & Ogunlana, 2008). Generally, leadership is considered to consist of more than one component. Studies on leadership present various perspectives in the different times. It is stated that leadership competence or personal ability will influence organizational performance and different leadership styles present different leadership behavior. As such, some leadership styles are introduced in our study, such as democratic leadership, autocratic leadership, participative leadership, servant leadership, transactional leadership, transformational leadership, and paternalistic leadership. The paternalistic leadership is popular in Chinese businesses because of the cultural context. Therefore, we pick paternalistic leadership as our study subject and introduce related outlines. Besides, we take into account the innovation and performance of hospitals as dependent variables in that innovation could be of competitive advantages in increasing hospital performance. Performance indicates activities, operations and business processes of an enterprise and different industries have different performance measures.

Thus, the relationship between leadership style, innovation, and performance is discussed in our study. As leadership behaviors have a stronger impact on innovation, which is identified to be significant for organizational performance, leadership styles can influence the organizational performance. Based on the relationship, we carry out the present study in an aim to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals, for which we built the conceptual research model and the ten hypotheses. Finally, the above discussions involve some issues of the criterion of leadership research in Table 2-3.

6.1.3 Chapter 3 Research methods

There are eight sections in Chapter 3, including *Research design*, *Quantitative method*, *Survey instrument*, *Validity and reliability*, *Sample*, *Data collection*, *Data analysis*, and the *Summary*.

We adopt quantitative research methods for the study, which include questionnaire design, research questions and hypotheses, sampling, data collection,

data analysis, and validity and reliability test. Quantitative research is often used for theory testing. The purpose of our study is to explore the relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals. Thus, the quantitative method is appropriate for the study. The questionnaire is designed to consist of paternalistic leadership measurement, innovation performance measurement, performance measurement, and demographics, including both English and simplified Chinese versions. The paternalistic leadership measurement is adapted from the three-element model developed by Cheng et al. (2000). We also adapt the innovation performance measurement provided in the prior studies (Wang & Ahmed, 2004; Matzler et al., 2008; Kmieciak et al., 2012). The Cronbach's alpha coefficient is reported in the previous research as 0.933, which provides evidence of high reliability. And we use the BSC for the hospital performance measurement. The fourth part of the questionnaire is the demographics, designed by ourselves. The demographics of the study include hospital types, hospital size, hospital location, gender, age, education, major, the number of years working in the current hospital as a CEO, and the number of years working in the current hospital as other roles. According to the validity and reliability of paternalistic leadership measurement, innovation measurement, and performance measurement, these survey instruments have been used in the previous studies and have been proved to be of high variability and reliability.

The present study examines the three questions. The ten main hypotheses are tested and the samples of our study mainly focus on the public hospitals in Chinese mainland. The CEOs of public hospitals are invited to participate in our survey. We design paternalistic leadership measurement, innovation measurement, performance measurement, and demographics in our questionnaire to collect related data. The questionnaires were sent out by paper and mail for in-person interviews. The data analysis covers reliability test, factor analysis, correlations, and the regression analysis by using the Windows version 22.0 SPSS as our statistical analysis tool. The research methods of the present study involve issues of the criterion of leadership research in Table 2-3, such as self-report, survey and Cross-sectional study.

6.1.4 Chapter 4 Results

There are seven sections in the chapter, including *Results of paternalistic leadership measurement*, *Results of innovation measurement*, *Results of performance measurement*, *Results of demographics*, *Reliability and validity test with factor analysis*, *Regression analysis*, and the *Summary*.

In the data collection, the 103 respondents present the answers to questions of the paternalistic leadership measurement, innovation measurement, performance measurement, and demographics.

Factor analysis is a technique for identifying groups of variables. We carry out the reliability and validity test with factor analysis for paternalistic leadership, innovation, and performance measurements. The results show that the factor structures of these measurements are constructive for the study, and are in conformity with the original idea. The regression analysis of the study included paternalistic leadership and innovation, paternalistic leadership and performance, and innovation and performance. In the regression analysis of paternalistic leadership and innovation, of the hypothesis test, only two hypotheses (H2, H3) are supported by the results of the regression analyses while the rest of eight were denied (H1, H4, H5,H6, H7, H8, H9, H10).

6.1.5 Chapter 5 Discussions

This chapter has four sections, including the *Discussions of hypothesis test*, the *Evaluation of research model*, the *Discussions of the relationship between the hypotheses and demographics* and *the summary*.

The purpose of the present study is to explore the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. We proposed ten hypotheses in the study. The results of hypothesis test support only two hypotheses and denied the rest of eight hypotheses. We then discuss the ten hypotheses and the demographics. Based on the regression result, we evaluate the primary conceptual research model and come up with the final research model. We

also discuss the impact of the demographics on the hypotheses.

6.1.6 Chapter 6 Conclusions

There are six sections in the chapter, including *Summary of the chapters*, the *Answers of research questions*, the *Research findings*, the *Limitations*, and the *Recommendations* and *the summary*.

The summary of the chapters presented the summaries of each chapter. Based on the research result, the answers to the three questions are presented in this chapter. There are five research findings of the study, which have the important contributions. On one hand, limitations are existed in the questionnaire and the samples of the study. On the other hand, some recommendations are suggested for CEOs of the public hospitals in China as well as for the future study.

6.2 Answers to research questions

The purpose of the study is to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. Thus, we proposed three questions of the study. Based on the research result, the answers of the three questions were as the follows:

Q1: What is the relationship between paternalistic leadership, innovation, and performance in Chinese public hospitals?

Based on the purpose of the study and the previous literature, we build the conceptual research model and propose the hypotheses in Chapter 2, demonstrating the relationship between paternalistic leadership and innovation, the relationship between paternalistic leadership and performance, and the relationship between innovation and performance. In Chapter 4, the results of regression analysis show that both benevolence and moral leadership have a significant positive regression influence on innovation; authoritarianism has a positive regression impact on innovation, but not in a notable way and neither paternalistic leadership nor innovation have a significant impact on performance.

Q2: Does paternalistic leadership positively moderate the relationship of innovation and performance?

In Chapter 2, paternalistic leadership is suggested as the moderate variable in the conceptual research model. Thus, we proposed the hypothesis that paternalistic leadership positively moderates the relationship between innovation and performance. This hypothesis could be stretched into three sub hypotheses: namely, authoritarianism negatively moderates the relationship between innovation and performance, benevolence positively moderates the relationship between innovation and performance and moral leadership positively moderates the relationship between innovation and performance. In Chapter 4, the results of the regression analysis show that no significant moderating effects are reflected in the three sub hypotheses. Thus, the moderating effects of paternalistic leadership on innovation and performance are not significant.

Q3: Which factor of paternalistic leadership has the highest impact on the hospital CEOs?

The hypothesis test of the study is to examine the relationship between paternalistic leadership and innovation, the relationship between paternalistic leadership and performance, and the relationship of paternalistic leadership to innovation and performance. In Chapter 4, the results of regression analysis show that paternalistic leadership has a significant positive impact on innovation. Of the three elements of paternalistic leadership, both benevolence and moral leadership have significant positive regression influence on innovation; authoritarianism also has a positive impact on innovation, but not in a notable way.

In the regression analysis of paternalistic leadership and performance, paternalistic leadership does not have a significant impact on performance. Of the three elements of paternalistic leadership, only moral leadership has a significant positive regression influence on internal business processes in the regression analysis of paternalistic leadership to each dimension of performance.

In the regression analysis of paternalistic leadership to innovation and performance, the moderating effects of paternalistic leadership on innovation and

performance are not significant. But the models of moral leadership, innovation, and financial, internal business processes, and learning and growth of performance show significant correlation. Both the model of benevolence, innovation, and financial and the model of authoritarianism, innovation, and financial show significant correlation.

Based on the above discussions, we find that moral leadership is the most effective element of paternalistic leadership in the regression analysis, exerting the highest impact on hospital CEOs in the study.

6.3 Research findings

The research findings of the present study are mainly deducted from several parts of the study, including the research topic, the results of the research hypotheses testing, and the BSC application in the practice.

In Chapter 2, the discussions show that inadequate studies have been conducted on the relationship between paternalistic leadership and innovation in the healthcare sector. Thus, our study on exploring the relationship between paternalistic leadership, innovation and performance in the healthcare sector would serve as a new contribution to this field.

Results of the research hypotheses testing through the regression analysis show that the paternalistic leadership has a significant positive impact on innovation. Of the three elements of paternalistic leadership, both benevolence and moral leadership have a positive significant impact on innovation; authoritarianism also has a positive regression influence on innovation, but not in a notable way. Hence, H1 is not supported by the result while H2 and H3 are supported. In the regression analysis of paternalistic leadership and performance, paternalistic leadership does not have a significant impact on performance. Of the three elements of paternalistic leadership, only moral leadership has a significant positive regression influence on internal business processes of performance. However, in general, H4, H5, and H6 are not supported by the result. In the regression analysis of paternalistic leadership, innovation and performance, the moderating effects of paternalistic leadership on

innovation and performance are not significant. But the models of moral leadership, innovation, and financial, internal business processes, and learning and growth of performance show significant correlation and both the model of benevolence, innovation, and financial and the model of authoritarianism, innovation, and financial show significant correlation. All these results are contrary to the hypotheses of H7, H8, and H9. Thus, H7, H8, and H9 are not supported by the result.

As for the third question about which factor of paternalistic leadership having the highest impact on the hospital CEOs, it turns out to be the moral leadership.

Finally, the research findings show that the BSC approach is not popularly used in the Chinese public hospitals.

6.4 Limitations

6.4.1 Limitations of the questionnaire

Our questionnaire consists of four parts, the paternalistic leadership measurement, innovation measurement, performance measurement, and demographics. There are some limitations of the questionnaire. For instance, although the paternalistic leadership measurement and the BSC have been used by some scholars in studies on Chinese hospitals, such as Chong (2013) and Chen et al. (2006), it was still not universally applied in related studies, and respondents of these studies are not CEOs of public hospitals. Moreover, the data we collect have not been used before in previous studies for analyzing the innovation measurement in hospitals. Thus, we concern whether these instruments are suitable to be used in public hospitals.

6.4.2 Limitations of the samples

There are three limitations of the samples in the study: firstly, the purpose of the present study is to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. CEOs of public hospitals in Chinese mainland are our target respondents of the questionnaire. There are four types

of Chinese public hospitals, mainly consist of hospitals from the government, the university, and the army. Hence, there are four options in terms of the hospital types in our questionnaire, including the government hospital, the university hospital, the army hospital, and the others. But of all the answers, the government hospital account for 90.3%; the university and the army hospital hit 0% and the others 9.7%. This result shows that our samples are only from the hospitals of the government and others. There are no samples from the university and the army hospitals. Thus, the sample size constitutes one of the limitations of our study. Secondly, we planned to collect the samples of our study in Chinese mainland, covering 31 direct-controlled municipalities and provinces. But the result shows that CEOs from Guangdong hospitals occupying 40.8%; Guangxi 5.8%; Hunan 5.8%; Henan 3.9%; Hubei 5.8%; Jiangsu 8.7%; Zhejiang 4.9%; Fujian 6.8%; Jiangxi 5.8%; Sichuan 7.8% and Yunnan 3.9%. As it can be seen, the samples mainly come from Guangdong, together covering only 11 provinces. Thirdly, eventually we have only 103 samples in hand, of which 93 are public hospitals. Comparing with the fact that there were 13,304 Chinese public hospitals in 2005 (www.nhfpc.gov.cn), our sample size is so small that perhaps it is not enough to support the study results. Fourthly, perhaps some respondents do not fully understand all the information mentioned by each item of the questionnaire. Fifthly, the answers may not reflect the respondents' truly thoughts and behaviors if they intend to beautify their own images in filling out the questionnaire. Sixthly, the answers of our questionnaire are only from CEOs without any subordinate. In summary, these limitations of the samples would certainly have an influence on the research result of our study.

6.5 Recommendations

Based on the purpose and the results of the study, there are some recommendations for the future research.

6.5.1 Recommendations to CEOs

CEOs should be aware of the impact of leadership on innovation and performance. Generally, authoritarian leadership has been identified as a negative factor for organizational performance and innovation in the previous studies. The generation of paternalistic leadership cannot leave without the influence of the traditional culture and the social environment. But situations are changing over time. For instance, nowadays, employees are gaining a foothold in the modern society, especially employees from younger generations. They show dissatisfaction with the authoritarian leadership which restricts the freedom of individuals. Hence, the authoritarian leadership needs to be changed. The answer of Q3 show that moral leadership of paternalistic leadership has the highest impact on the hospital CEOs in the study. Thus, in paternalistic leadership, benevolence and moral leadership should be given more emphasis. Furthermore, as CEOs do not have the complete right of human resource, they should also adopt other leadership styles to improve management performance, such as the transformational and transactional leadership.

6.5.2 Recommendations for future study

We apply quantitative research method as the research method of our study to examine the relationship between paternalistic leadership, innovation and performance in Chinese public hospitals. Thus, firstly, qualitative method in case study or mixed methods could be used for further research in future studies.

Secondly, the relationship between paternalistic leadership, innovation and performance in other contexts is suggested to explore in future studies.

Thirdly, in this study, paternalistic leadership is used to examine the relationship of innovation and performance. Therefore, future researches could study on other leadership styles, such as transformational leadership, transactional leadership and servant leadership.

Fourthly, the samples of our study were mainly from Guangdong and other ten

provinces. Thus, samples of future study are recommended to be collected from only one certain province, one direct-controlled municipality or even covering all provinces and direct-controlled municipalities.

Fifthly, our samples are only from public hospitals. Thus, private hospitals or public-private partnership hospitals could be choices of sample sources in future studies.

Sixthly, the answers of our questionnaire are only from CEOs in a self-reporting way in the present study. In future studies, the samples could extent to subordinates.

6.6 Summary

The outlines of each chapter of the study are summarized in this chapter, including in sequence the Introduction, Literature review, Research methods, Results, Discussions, and Conclusions. Based on the research result, the answers of the three research questions are also presented in this chapter. The summary of the research findings serves as the most important part in the study. Furthermore, some limitations of the questionnaire and the samples are presented and meanwhile some recommendations to CEOs and for the future study are suggested in the chapter.

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Appendix A - Part 1 Measures of paternalistic leadership

Part 1 Measures of paternalistic leadership

Please rank the measures of paternalistic leadership with regard to the following items. (1=Strongly disagree, 2= Disagree, 3=Slightly disagree, 4=Neutral, 5=Slightly agree, 6=Agree, 7=Strongly agree)

Items	1	2	3	4	5	6	7
1. I devote all my energy to taking care of our members.							
2. I take good care of family members of our members as well.							
3. I will help our members when they are in an emergency.							
4. I try to understand what the cause is when members don not perform well.							
5. I will provide our members chance for correcting mistakes.							
6. I will not embarrass subordinates in public.							
7. I never shirk responsibility in front of working problems.							
8. I do not use *guanxi* (personal relationship) or back-door practices to obtain illicit personal gains.							
9. I do not use my authority to seek special privileges for myself.							
10. I act as an exemplar in work and personal conduct.							
11. I ask our members to obey my instructions completely.							
12. I will take revenge on our members if they express objection in public.							
13. I make all decisions by myself in our hospital.							
14. Our members will make a final decision on my opinion at the meeting.							
15. I never leak my real thoughts to my members.							
16. Our members feel pressured when working with me.							
17. I scold my members when they cannot accomplish their tasks.							
18. My members have to follow my rules to get things done. If not, I will punish them severely.							

Appendix B - Measures of paternalistic leadership (Chinese version)

Measures of paternalistic leadership (Chinese version)

请给以下关于家长式领导力的问题进行评级。 (1=强烈不同意, 2= 不同意, 3=有点不同意, 4=中立态度, 5=稍微同意, 6=同意, 7=强烈同意)

问 题	1	2	3	4	5	6	7
1. 我经常会向部属嘘寒问暖。							
2. 我对部属的照顾会扩及到其家人。							
3. 部属生活上有困难时，我会及时伸出援手。							
4. 当他人工作业绩不佳时，我会去了解真正的原因何在。							
5. 当部属工作出纰漏时，我会给其改正的机会。							
6. 我不会当着同事的面给人难堪。							
7. 当工作出问题时，我不会把责任推得一干二净。							
8. 我不会因个人的利益去拉关系、走后门。							
9. 我为人正派，不会假公济私。							
10. 我是部属为人做事的好榜样。							
11. 我要求部属完全服从我的领导。							
12. 如果有部属当众反对我的意见时，会遭到我的冷言讽刺。							
13. 医院大小事情都由我自己单独决定。							
14. 开会时，都按我的意见做最后的决定。							
15. 我从不把我的真实想法透露给部属。							
16. 与我一起工作时，部属感到我带给大家很大的压力。							
17. 当任务无法达成时，我会斥责他们。							
18. 我遵照原则办事，严厉处罚违反规定的行为。							

Appendix C - Categories of three elements of paternalistic leadership measures

Categories of three elements of paternalistic leadership measures

Items	Categories
1. I devote all my energy to taking care of our members.	Benevolence
2. I take good care of family members of our members as well.	Benevolence
3. I will help our members when they are in an emergency.	Benevolence
4. I try to understand what the cause is when members don not perform well.	Benevolence
5. I will provide our members chance for correcting mistakes.	Benevolence
6. I will not embarrass subordinates in public.	Benevolence
7. I never shirk responsibility in front of working problems.	Morality
8. I do not use *guanxi* (personal relationship) or back-door practices to obtain illicit personal gains.	Morality
9. I do not use my authority to seek special privileges for myself.	Morality
10. I act as an exemplar in work and personal conduct.	Morality
11. I ask our members to obey my instructions completely.	Authority
12. I will take revenge on our members if they express objection in public.	Authority
13. I make all decisions by myself in our hospital.	Authority
14. Our members will make a final decision on my opinion at the meeting.	Authority
15. I never leak my real thoughts to my members.	Authority
16. Our members feel pressured when working with me.	Authority
17. I scold my members when they cannot accomplish their tasks.	Authority
18. My members have to follow my rules to get things done. If not, I will punish them severely.	Authority

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Appendix D - Part 2 Measures of innovation performance

Part 2 Measures of innovation performance (Wang & Ahmed, 2004; Matzleret al., 2008; Kmieciak et al., 2012; a = 0.933**)**

Please rank the innovation performance of your hospital with regard to the following items. (1=Strongly disagree, 2= Disagree, 3=Slightly disagree, 4=Neutral, 5=Slightly agree, 6=Agree, 7=Strongly agree)

Items	1	2	3	4	5	6	7
1. In new product / service introductions, our hospital is often first-to-market.							
2. In comparison with our competitors, our hospital has introduced more innovative products/ services of the last year.							
3. Our new products / services are often perceived as highly innovative by customers.							
4. In comparison with our competitors, our hospital has introduced more innovative production or delivery methods of the last year.							
5. New products/ services in our hospital often get us an edge on new competitors.							
6. Our hospital will introduce new services within a year.							
7. In new product/service introductions, our hospital is often at the cutting edge of technology.							
8. In comparison with our competitors, our marketing activity is original and novel.							
9. The number of new services thus year is more than that of last year.							

Appendix E - Part 2 Measures of innovation performance (Chinese version)

Part 2 Measures of innovation performance (Chinese version)

第二部分 创新绩效指标 (Wang & Ahmed, 2004; Kmieciak, Michna, & Meczynska, 2012; a = 0.933**)**

请给以下有关您公司在创新方面的事项进行评级。(1=强烈不同意, 2= 不同意, 3= 有点不同意, 4=中立态度, 5=稍微同意, 6=同意, 7=强烈同意)

问 题	1	2	3	4	5	6	7
1.在新产品/服务的推介中，我们公司经常是市场第一。							
2.与我们的竞争对手对比，我们公司在过去的一年里推出更多的新产品和服务。							
3.我们的新产品/服务经常被客户视为非常新颖的。							
4.与我们的竞争对手对比，我们公司在过去的一年里推出更多的创新生产或交付方式。							
5.我们公司的新产品/服务让我们去应对新的竞争者。							
6.我们公司将在一年内推出新产品。							
7.在新产品/服务的推介中，我们公司经常处于技术的前沿。							
8.与我们的竞争对手对比，我们公司的营销活动是新颖的。							
9.新产品的数量比去年多。							

Appendix F - Part 3 Measures of hospital performance

Part 3 Measures of hospital performance

The following questions ask about your hospital performance of the financial perspective, customer perspective, internal business process perspective, and learning and growth of BSC framework (Kaplan & Norton, 1992, Chen, Yamauchi, Kato, Nishimura, and Ito, 2006) of the last year.

01. Please rank the financial measures of your hospital. (1= Extremely bad performance, 2=Bad performance, 3=Average, 4=Good performance, 5=Excellent performance)

Financial measures	1	2	3	4	5
1. Total profit margin of the last year					
2. Asset turnover of the last year					
3. Change of cost per case of the last year					
4. Personnel expenditure as a percent of total patient revenue of the last year					
5. Material cost as a percent of total patient revenue of the last year					

02. Please rank the customer measures of your hospital. (1= Extremely bad performance, 2=Bad performance, 3=Average, 4=Good performance, 5=Excellent performance)

Customer measures	1	2	3	4	5
1. Patient satisfaction of the last year					
2. Outpatient waiting times of the last year					

03. Please rank the internal business process measures of your hospital. (1=Extremely bad performance, 2=Bad performance, 3=Average, 4=Good performance, 5=Excellent performance)

Internal business process measures	1	2	3	4	5
1. Staff satisfaction of the last year					
2. Staff turnover of the last year					
3. Length of stay of the last year					
4. Occupancy of the last year					
5. Outpatients per year per doctor of the last year					
6. Emergency patients per year per doctor of the last year					
7. Admitted inpatients per year per doctor of the last year					
8. Mortality of the last year					
9. Medical accidents leading to law suit rate of the last year					

04. Please give your opinion on learning and growth measures. (1=Extremely bad performance, 2=Bad performance, 3=Average, 4=Good performance, 5=Excellent performance)

Learning and growth measures	1	2	3	4	5
1. Expenditure on medical research of the last year					
2. Academic papers written in English/Chinese per year per medical staff member of the last year					
3. Outpatient activity of the last year					

Appendix G - Part 3 Measures of hospital performance (Chinese version)

Part 3 Measures of hospital performance (Chinese version)

以下问题是从平衡计分卡里关于财务、客户、内部运营和学习与成长四个维度来度量去年您的医院业绩情况。请在相关的选项里评级！(1=非常差的绩效, 2=差的绩效, 3=一般, 4=好的绩效, 5=优秀业绩)

01. 请给您医院在财务方面的指标评级。(1=非常差的绩效, 2=差的绩效, 3=一般, 4=好的绩效, 5=优秀业绩)

财务指标	1	2	3	4	5
1. 去年全部的利润率					
2. 去年的资产周转率					
3. 去年每件病例的成本变化					
4. 去年人力成本占病人总收入的比例					
5. 去年物料成本占病人总收入的比例					

02. 请给您医院在客户方面的指标评级。(1=非常差的绩效, 2=差的绩效, 3=一般, 4=好的绩效, 5=优秀业绩)

客户指标	1	2	3	4	5
1. 去年病人的满意度					
2. 去年门诊等候的时间					

03. 请给您医院在内部运营方面的指标评级。(1=非常差的绩效, 2=差的绩效, 3=一般, 4=好的绩效, 5=优秀业绩)

内部运营指标	1	2	3	4	5
1. 去年员工的满意度					
2. 去年员工的流动率					
3. 去年病人的住院时间					
4. 去年病人的入住率					
5. 在去年每名医生全年门诊病人的情况					
6. 在去年每名医生全年急诊病人的情况					
7. 在去年每名医生全年确诊住院患者的情况					
8. 在过去的一年中病人的死亡率情况					
9. 去年导致法律诉讼率的医疗事故情况					

04. 请给您医院在学习与成长方面的指标评级。(1=非常差的绩效, 2=差的绩效, 3=一般, 4=好的绩效, 5=优秀业绩)

学习与成长指标	1	2	3	4	5
1. 去年在医学研究上的开支情况					
2. 在去年每名医务人员撰写的英文/中文学术论文情况					
3. 在去年的门诊活动情况					

Appendix H - Part 4 Demographics

Part 4 Demographics

01. Your hospital belongs to

☐ The government ☐ The university ☐ The army ☐ Others

02. Number of beds in your hospital

☐ ≤ 100 of total hospital beds ☐ 101 to 500 of total hospital beds

☐ ＞500 of total hospital beds

03. Your hospital location (Province)

☐ Guangdong ☐ Guangxi ☐ Hunan ☐ Shanghai ☐ Beijing ☐ Tianjin ☐ Jilin

☐ Heilongjiang ☐ Liaoning ☐ Hebe ☐ Henan ☐ Shandong ☐ Shanxi ☐ Shanxi

☐ Neimenggu ☐ Ningxia ☐ Gansu ☐ Xinjiang ☐ Qinghai ☐ Xizang ☐ Hubei

☐ Anhui ☐ Jiangsu ☐ Zhejiang ☐ Fujian ☐ Jiangxi ☐ Sichuan ☐ Guizhou

☐ Yunnan ☐ Hainan ☐ Chongqing

04. Your gender:

☐ Male ☐ Female

05. Your age:

☐ ≤ 30 ☐ 31-35 ☐ 36-40 ☐ 41-45

☐ 46-50 ☐ 51-55 ☐ 56-60 ☐ >60

06. Your education:

☐ Primary school ☐ Junior middle school ☐ High school ☐ College degree

☐ Bachelor ☐ Master ☐ Doctor

07. What is your major?

☐ Healthcare ☐ Management ☐ Others

08. Number of years working in the current hospital as a CEO:

☐ ≤ 5 years ☐ 6-10 years ☐ 11-15 years ☐ 16-20 years ☐ >20years

09. Number of years working in the current hospital with other roles:

☐ ≤ 5 years ☐ 6-10 year ☐ 11-15 year ☐ 16-20 years ☐ >20years

Appendix I - Part 4 Demographics (Chinese version)

Part 4 Demographics (Chinese version)

调查对象信息

01. 您的医院属于

☐政府 ☐ 大学 ☐军队 ☐其它

02. 您的医院住院床位数量

☐ 小于 100 张 ☐101 到 500 张 ☐ 多于 500 张

03. 您的医院位于

☐广东 ☐广西 ☐湖南 ☐上海 ☐北京 ☐天津 ☐吉林 ☐黑龙江 ☐辽宁

☐河北 ☐河南 ☐山东 ☐山西 ☐陕西 ☐内蒙古 ☐宁夏 ☐甘肃 ☐新疆

☐青海 ☐西藏 ☐湖北 ☐安徽 ☐江苏 ☐浙江 ☐福建 ☐江西 ☐四川

☐贵州 ☐云南 ☐海南 ☐重庆

04. 您的性别:

☐男 ☐女

05. 您的年龄:

☐30 岁≤ ☐ 31-35 岁 ☐36-40 岁 ☐41-45 岁

☐46-50 岁 ☐ 51-55 岁 ☐ 56-60 岁 ☐ >60 岁

06. 您的教育程度:

☐小学 ☐初中 ☐ 高中 ☐专科 ☐本科 ☐硕士 ☐博士

07. 您最后所得学历的专业是什么?

☐医疗卫生类 ☐ 管理类 ☐其它

08. 在目前的医院您已担任院长的时间是:

☐5 年≤ ☐6-10 年 ☐11-15 年 ☐ 16-20 年 ☐ >20 年

09. 在目前的医院您已担任其它角色的时间是:

☐5 年≤ ☐6-10 年 ☐11-15 年 ☐ 16-20 年 ☐ >20 年 1