ISCTE Business School
Instituto Universitário de Lisboa

Corporate Social Responsibility Practices of Pharmaceutical Companies in China: A Scale Development & Empirical Study

Yiyun QIAN

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

Doctor of Management

Supervisor:

Prof. Elizabeth Reis, Professora Catedrática,

ISCTE - Instituto Universitário de Lisboa, Lisbon, Portugal

Co-supervisor:

Prof. Lihong Gu, Invited Professor,

School of Health Services Management, Southern Medical University, China

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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:  Date: 27 SEP 2016

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Abstract

Corporate Social Responsibility (CSR) has been a hot topic in literature ever since a couple of decades ago, and it roughly refers to the positive influence that a company's operations have on its stakeholders. Amongst various industries, the pharmaceutical sector is one of the most debated in that these companies produce disease-curing and even life-saving products in a for-profit manner, thereby involving many CSR-related issues. Now China's pharmaceutical industry has the second largest output in the world, but various problems have also emerged and led to negative consequences, many of which were caused by failure to abide by CSR norms.

In order to assess the CSR practices of pharmaceutical companies in China, a reliable and credible measurement instrument has to be available. However, currently there is still no universally accepted definition of CSR, and existing theoretical models fail to fit either characteristics of the pharmaceutical industry or China's cultural context. As a result, a new model has to be built that takes both factors into account.

The study has two main purposes: one is to design an original and valid scale for measuring the CSR practices of pharmaceutical companies in China, and the other is to use this tool to evaluate their actual CSR performance. Based on a standard scale development process (in-depth interviews, open-ended questionnaire, discussions with experts, reliability and validity evaluation with exploratory and confirmatory factor analyses), finally an eight-dimensional and 36-item measurement tool was validated. The eight initial dimensions (Shareholders, Managers, and Employees; Creditors & Suppliers, Patients & Doctors; Government, Environment, and Local Community) were then transformed into three second-order dimensions: CSR for Internal Parties, CSR for External Partners, and CSR for Public Entities.

This conceptual model was later applied to reveal the circumstances within China's pharmaceutical industry. Results show that CSR practices in the pharmaceutical industry in China coexist at very different levels: foreign-owned companies and joint ventures generally outperformed their state-owned and privately owned counterparts, and larger companies also had better CSR citizenship than smaller ones.

Key words: Corporate Social Responsibility; Pharmaceutical Industry; China; Scale Development

JEL Classification: M14 - Corporate Culture; Social Responsibility; **I11** - Analysis of Health Care Markets

Resumo

A Responsabilidade Social das Empresas (RSE) tem sido um tópico recorrente na literatura nas duas últimas décadas e, de forma muito resumida, refere-se à influência positiva que a atividade empresarial pode ter nos seus diversos *stakeholders*. De entre os múltiplos setores de atividade, a indústria farmacêutica é uma das mais discutidas por produzir medicamentos que curam doenças e salvam vidas mas de forma lucrativa, e por isso, envolvendo muitos problemas relacionados com a RSE. Atualmente, a indústria farmacêutica na China é segunda em termos de produção mundial, mas apresenta problemas variados com consequências negativas, muitas delas resultantes do não cumprimento das normas de resonsabilidade social.

Para que se possam avaliar as práticas de RSE na China, é necessário um instrumento de medida fiável e válido. No entanto, até ao momento não existe uma escala de medida da RSE universalmente aceite e os atuais modelos teóricos não incorporam as características da indústria farmacêutica e o contexto cultural específico da China. Daí a necessidade de desenvolvimento de um modelo teórico que possa incluir estas duas dimensões.

Este estudo tem como principais objectivos desenhar e validar um instrumento de medida das práticas de RSE na indústria farmacêutica chinesa e, utilizando essa escala de medida, avaliar o atual desempenho das empresas chinesas deste setor em termos de práticas de responsabilidade social. Foi utilizada uma metodologia estandardizada para o desenvolvimento de uma escala de medida (entrevistas em profundidade, perguntas abertas, pré-teste ao questionário, validade e fiabilidade do questionário com análises fatoriais exploratória e confirmatória). Foi validada uma escala com 36 itens e oito dimensões (Acionistas, Gestores e Colaboradores; Credores & Fornecedores, Doentes & Médicos; Governo, Ambiente e Comunidade Local) que, de seguida, foram transformadas em três dimensões de segunda ordem: RSE para as partes internas, RSE para os parceiros externos e RSE para as entidades públicas.

Este modelo conceptual foi depois aplicado para identificar as particularidades da indústria farmacêutica na China. Os resultados mostram que as práticas de RSE coexistem a níveis muito diferentes: em geral as empresas de capital estrangeiro ou joint ventures apresentam melhor performance que as empresas públicas ou privadas; as empresas maiores revelam mais práticas de RS que as mais pequenas.

Palavras-chave: Responsabilidade Social das Empresas; Indústria Farmacêutica; China; Escalas de Medida

JEL Classification: M14 - Corporate Culture; Social Responsibility; **I11** - Analysis of Health Care Markets

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List of Acronyms

ACA:	Axial Coding Analysis
AGFI:	Adjusted Goodness-of-Fit Index
AIDS:	Acquired Immune Deficiency Syndrome
AMOS:	Analysis of Moment Structures
ANOVA:	Analysis of Variable
API:	Active Pharmaceutical Ingredient
ATM:	Access to Medicine
AVE:	Average Variance Extracted
BBC:	British Broadcasting Corporation
CFA:	Confirmatory Factor Analysis
CFDA:	China Food and Drug Administration
CFI:	Comparative Fit Index
cGMP:	current Good Manufacturing Practices
CITC:	Corrected Item-Total Correlation
CR:	Composite Reliability
CSR:	Corporate Social Responsibility
CSRC:	China Securities Regulatory Commission
CSRO:	Corporate Social Responsibility Orientation
df:	degree of freedom
DTCA:	Direct-to-Consumer Advertising
EFA:	Exploratory Factor Analysis
FDA:	Food and Drug Administration
GD:	Generic Drug
GFI:	Goodness-of-Fit Index
GMP:	Good Manufacturing Practice
GSK:	GlaxoSmithKline
GT:	Grounded Theory
IBM:	International Business Machines
ICC:	International Chamber of Commerce
KMO:	Kaiser-Meyer-Olkin
LLC:	Limited Liabilities Company
LTO:	Licence-To-Operate
MBO:	Management Buyout
NGO:	Non-governmental Organisation
OCA:	Open Coding Analysis
OEM:	Original-equipment Manufacturing
OTC:	Over-the-Counter
OMV:	Organisational Moderating Variable
PC:	Principal Component
PCA:	Principal Component Analysis

PLC:	Public Limited Company
PRESOR:	Perceived Role of Ethics and Social Responsibility
R&D:	Research and Development
RMB:	Ren Min Bi (Name of China's Legal Tender)
RMR:	Root Mean-square Residual
RMSEA:	Root Mean Square Error of Approximation
ROI:	Return on Investment
SEM:	Structural Equation Modelling
SFL:	Standardised Factor Loading
SME:	Small and Medium Enterprise
SOE:	State-owned Enterprise
SPSS:	Statistical Product and Service Solutions
SRI:	Socially Responsible Investing
STD:	Sexually Transmitted Diseases
TCM:	Traditional Chinese Medicine
TLI:	Tucker-Lewis Index
TRI:	Toxics Release Inventory
WHO:	World Health Organisation

Chapter 1: Introduction

1.1 Introduction

In recent years, the pharmaceutical sector is experiencing both rapid growth and various problems. In China, rampant corruption and unsatisfactory product quality are two outstanding issues confronting the entire industry. Such behaviours have already led to serious consequences and are clearly against Corporate Social Responsibility (CSR), and improving the CSR of pharmaceutical companies in China may help alleviate these problems.

Various researchers and policymakers have also been seeking solutions to mend the situation, including more strict legislation, publication of CSR benchmarking results, introducing CSR guidelines etc. However, these measures have produced mixed results, and many pharmaceutical companies have complained about the unreasonable standards adopted to evaluate their CSR. Therefore, it is truly necessary to develop a theoretical model that fully represents the situation as well as a measurement approach that presents the CSR practices of pharmaceutical companies in China in an objective manner.

1.2 Research Background

1.2.1 CSR of the Pharmaceutical Industry in the 21st Century

Internationally the pharmaceutical sector is already faced with fierce competition and strategic consolidation, and managers of this sector are expected to behave responsibly to the society, and there are often greater social risks associated with the testing and use of medicines (O'Riordan & Fairbrass, 2008). Unlike the cases in many other industries, the products of pharmaceutical companies directly affect the health, well-being and even lives of people, involving subtle ethical issues (Smith, 2008). Compared to other industries, violations of CSR norms by pharmaceutical companies can be even more costly and destructive, as is decided by their nature (Blombäck & Scandelius, 2013). Now it is generally accepted that receiving medical treatment is a basic form of human rights, and nobody can be denied this right out of financial difficulties (Khosla & Hunt, 2009; Dye, 2012).

1.2.2 CSR of China's Pharmaceutical Industry: The Current Picture

As of 2014 there were approximately 4,000 pharmaceutical companies in China (Chinese Ministry of Health, 2014). Compared to multinational counterparts, Chinese pharmaceutical companies are relatively small in size and weak in R&D (Science and Technology Daily, 2014). Moreover, China is the largest producer of Active Pharmaceutical Ingredients (APIs) in the world; from 1950 to 2012, 97% of the medicines produced in the country were Generic Drugs (GDs) (Chinese Ministry of Health, 2014). According to the report from the CSR Research Centre of China Academy of Social Sciences (2014), only 34 out of a random sample of 172 Chinese pharmaceutical companies actually published their CSR reports, or a mere 20%. Most of the companies surveyed performed well in product quality, workers' rights, and environmental friendliness, whilst public programmes and protection of shareholders' rights needed urgent improvement.

The rapid growth of China's pharmaceutical sector corresponds to the fact that China is now the world's second largest market for medical products, only after the United States. At the end of 2012, the total product of China's pharmaceutical sector amounted to 1.83 trillion RMB (approximately 273 billion euros), which showed a 21.7% increase compared to the previous year (China National Union for Medical and Pharmaceutical Practitioners, 2013).

Nonetheless, pharmaceutical companies' breaches of CSR are frequently reported by news media all around the world, e.g. concealing side effects or even failures of medicines, unethical clinical trials of new drugs, bribing doctors and government officials, and unnecessary testing on animals, which often lead to major lawsuits and scandals (Frederiksborg & Fort, 2014). Negative consequences for those companies themselves include loss of sales and reputation, large fines, financial compensation for victims etc (Baciu, 2010).

On the one hand, the aforementioned problems are especially obvious in developing countries, including China, as the market and legal environment in these countries are relatively underdeveloped (Guan & Noronha, 2011). The recent scandals of the UK-based pharmaceutical enterprise GlaxoSmithKline (GSK) and the French-based Sanofi regarding systematically bribing doctors in China to promote sales have won considerable media coverage, reflecting the poor CSR practices of even renowned multinational pharmaceutical giants (Le Figaro, 2013; BBC, 2014). On the other hand,

negative CSR practices of some Chinese pharmaceutical companies in terms of poor product quality are even more devastating and have led to health crises in the country. Following are a few examples (Dong, Huang & Dong, 2009):

In May 2006, the tainted Armillarisin injections produced by Qiqihar Second Pharmaceutical Co. caused acute renal failure on more than one hundred patients, and 13 of them died. During the production of the injections, diethylene glycol was wrongfully used as the auxiliary material of propylene glycol.

In August 2006, 81 patients displayed symptoms of chest oppression, cardiopalmus, and allergic shock after using the Clindamycin Phosphate Glucose injections produced by Shanghai Huayuan Pharmaceutical Co., and three of them lost their lives. The producer failed to abide by the rules regarding sterilisation and pyrogen inspection, which resulted in the unfortunate accident.

In January 2009, the 210,000 samples of rabies vaccines produced by Jiangsu Yanshen Pharmaceutical Co. were proven unqualified, because the volume of active ingredients was below the national standard of 2.5IU / shot. As a result, they were unlikely to guard against rabies. Those vaccines were sold and used throughout the country, affecting more than 200,000 people.

However, only very few responsible persons were held accountable; most simply faced ‘moderate’ fines or even token punishment. This meant that legislation was still inadequate and law enforcement was too lenient in China. In this case, guaranteeing the quality of products, which itself is an important aspect of CSR, becomes top priority of China’s pharmaceutical companies.

Wang, Xu & Zheng (2011) argue that pharmaceutical companies in China are probably not fully assuming CSR, but systematic and statistical evidence remains unavailable or unreliable. The research of Liu & Cai (2012) shows that not all Chinese pharmaceutical companies are performing badly, and companies may be behaving well in some aspects but need enhancement in other ones.

1.2.3 Past Studies and Research Goals

Existing research on CSR is usually divided into three types, namely normative, descriptive / empirical, and strategy research. Normative investigation concentrates on why companies need to assume CSR, descriptive / empirical study deals with the problems of what proper CSR practices should be or have been performed, and strategy research refers to how CSR should be implemented (Zheng, 2006).

In addition, previous studies (Oger, 2009; West, 2012) have also demonstrated that pharmaceutical companies should assume CSR, both for the interest of the entire society and for their own long-term success, as are the results of enhanced reputation and competitive advantage. Failure to abide by CSR norms can lead to undesired outcomes, and such costs often outweigh the short-term 'benefits' of breaching the rules.

From the perspective of pharmaceutical companies themselves, their managers need to precisely understand what rules and standards their companies are expected to comply with and what CSR-related core values should be integrated into their strategy. The government also needs to be fully aware of what represents good CSR activities for pharmaceutical companies and what policies are the most effective to entice them to truly embrace CSR for the well-being of the community and society. However, these goals are impossible to realise failing adequate and credible knowledge on the dimensions and determinants of the CSR practices of pharmaceutical companies.

Lee & Kohler (2010) hold that benchmarking and transparency are the two leading incentives for businesses to improve their CSR, but benchmarking cannot be carried out if an appropriate measurement instrument is not available. Moreover, CSR can be culture-dependent and industry-specific, and this means measurement tools developed for one country or one business sector may not suit another. Although various measurement approaches for CSR have already been proposed in literature, currently there is still no scale dedicated to estimating the CSR practices of pharmaceutical companies in China, which should be adapted to represent China's social and cultural frameworks as well as the specific features of the pharmaceutical industry. Thus a comprehensive and objective instrument has to be designed to reveal the CSR practices of pharmaceutical companies in China, and it may also help highlight areas where CSR activities are called for, thereby suggesting measures for improvement.

Furthermore, existing efforts on producing tools evaluating CSR have largely focused on managerial perceptions of good CSR rather than actual organisational behaviours. The former generally refers to 'what should be done'. However, the latter denotes 'what have been done' and still remains an under-researched area. In this thesis, an empirical study will be carried out after the scale is established to exhibit what pharmaceutical companies in China have done in terms of CSR implementation.

1.3 Research Dilemma

Based on the above analysis, the research agenda becomes clear: first a credible and specific instrument measuring the CSR practices of pharmaceutical companies in China has to be constructed according to the standard process for scale development, and then this tool is utilised to ascertain those companies' CSR performance. The former step aims at filling a gap in literature, and the latter step seeks to present the current picture of Chinese pharmaceutical companies' CSR practices.

In order to achieve the above targets, issues including the definition of CSR for pharmaceutical companies in China, who they are responsible to, what they are responsible for, and what should be done to enforce CSR implementation etc, must be dealt with. Moreover, how the reliability and validity of the measurement instrument should be guaranteed plays a central role in the research. The subsequent empirical study must also be conducted in a way that conforms to the most rigorous academic standards.

1.4 Research Questions

To fulfil the research aims, the following questions must be unambiguously answered before corresponding strategies can be devised.

1. What is the clear definition of CSR for pharmaceutical companies in China? Do international CSR norms apply to the market and cultural context of China? Do general (industry-neutral) CSR standards suit the pharmaceutical sector? Does China's pharmaceutical industry display difference from their counterparts elsewhere?

2. Who are pharmaceutical companies in China responsible to? What are they responsible for each party? Can all stakeholders be identified? Can a theoretical model be built to represent the situation?

3. What is the most appropriate and viable method to assess the CSR practices? If a scale is to be used, how should it be developed? How should its reliability and validity be ensured?

4. What are the actual CSR practices of pharmaceutical companies like in China? Are they performing equally in every aspect, or are there dissimilarities? Besides, are there statistically significant differences on their geographic locations, histories, ownership types, and staff sizes?

Future studies can probably be directed at evaluating the benefits and costs for pharmaceutical companies associated with various CSR practices.

1.5 Structure of the Thesis

In this research, first an extensive literature review is carried out to summarise existing theoretical implications of the research objects, and then a conceptual model is constructed to represent the simplified version of the real world. This is followed by a detailed description of the methods adopted to conduct the research, including the procedures for scale development and empirical study. A measurement tool is then devised based on literature review and the Grounded Theory (GT) method, and its reliability and validity will be tested using approaches like Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The instrument developed is then utilised to evaluate the CSR practices of pharmaceutical companies in China, and the results will be discussed in detail. Finally a conclusion is drawn to present the findings and describe research limitations as well as directions for further study.

This thesis comprises six chapters. Chapter 1 (Introduction) outlines the research background, questions, and process, and Chapter 2 (Literature Review) critically reviews existing literature on CSR, especially in the pharmaceutical sector and in China, as well as methods to appraise CSR practices. Chapter 3 (Methodology) introduces the research methods to be employed in the study, and Chapter 4 (Scale Development) details the entire process for the development of a measurement instrument. This is followed by Chapter 5 (Empirical Study), which reports the discoveries of the empirical research. Chapter 6 (Conclusion) summarises all findings and expounds on research limitations and implications for future research.

1.6 Summary

Now there is an urgent need for pharmaceutical companies in China to improve their CSR practices, as evidence demonstrates that negative CSR behaviours have caused damaging results to both the society and those companies themselves. The key to tackling this problem and obtaining long-term success is to minimise the gap between the perceived positive CSR norms of pharmaceutical companies and their actual behaviours, and a comparison between the two reveals where progress can be made.

Nevertheless, the prerequisite for reaching this objective is to develop a credible tool measuring CSR practices of pharmaceutical companies in China and to conduct a corresponding empirical study. In the following chapter, a critical review of the relevant academic contributions to date will be presented in detail.

Chapter 2: Literature Review

2.1 Introduction

For decades, numerous scholars have endeavoured to develop the precise definition of CSR, as well as relevant theories and concepts to explain it in the business environment. Through these efforts, contributions including the Stakeholder Theory, Triple Bottom Line Approach, SA8000 etc, have been made to unravel the various issues regarding CSR.

The review of CSR-related literature is divided into two sections in this chapter. The first summarises the existing attempts to explain the definition, types and development history of CSR and theories to clarify how CSR activities should be enforced. The second offers more details about the current CSR environment in China, especially in the pharmaceutical industry.

After examining how CSR functions in the general business world, scrutiny is given on CSR within the pharmaceutical sector to describe its seeming contradictory 'dual role' (making disease-curing or even life-saving products in a for-profit manner) and the perceived responsibilities. This is followed by the introduction of various methods to evaluate the CSR practices of pharmaceutical companies, as well as strategies for improvement.

At the end of this chapter, the relations between CSR in general and that in the pharmaceutical industry are analysed, and gaps in the existing literature are identified. A preliminary conceptual model is then built based on theories and assumptions to reflect the situation.

2.2 CSR in the Contemporary Business Environment

2.2.1 Definition of CSR

Various researchers have proposed different definitions of CSR, but a universally accepted description is still absent (McWilliams & Siegel, 2001; Zheng, 2006). One of the most popular explanations is that 'CSR serves as an internal, self-regulating mechanism by which the enterprise examines and practises full compliance with law, ethical requirements, and international standards. It is a process to implement

responsibility for its actions and ensures positive influence on its stakeholders' (McWilliams, Siegel & Wright, 2006: Page 12). Early thoughts regarding CSR were usually grouped into CSR1 (Corporate Social Responsibility I), and the main discussion question in that period was whether economic responsibility belonged to or was parallel to social responsibility. Subsequently, two schools developed separately based on whether or not economic responsibility was considered part of social responsibility (Zheng, 2006).

Scholars who agree that economic responsibility should be parallel to social responsibility argue that a business has economic, social and legal responsibilities, and these 'social responsibilities' refer to the contribution made to politics, social welfare, education, employees' interest and other societal benefits (McGuire, 1963). Davis (1960: Page 73) defines CSR as 'corporate decisions and activities beyond economic benefits, technological interest and legal requirements'. Manne & Wallich (1972) point out that CSR refers to spontaneous actions above economic interest and legal obligations. Backman (1975) claims that CSR includes the missions and motives that a business must take into account in addition to maximisation of shareholder value. In the Chinese business cultural context, Lu (2001) holds the idea that incorporating economic responsibilities into social responsibilities may lead to infinite expansion of CSR, which makes it virtually impossible to realise.

In contradiction to the above assumptions, some researchers believe that economic responsibilities should be integrated into social responsibilities. Carroll (1979) proposes the four-dimensional conceptual model of corporate performance: economic, legal, ethical, and voluntary responsibilities. The 'voluntary responsibility' was later changed to 'philanthropic responsibility' by himself in 1991. Scholars holding similar views include, for example, Berete (2011) and Zheng (2006).

Wang (2014) claims that such divergence in opinions is caused by different views on whom a business is responsible for. The former group of scholars believe that the main body assuming CSR is the enterprise, and the objects encompass shareholders, all other stakeholders and the general public. Conversely, the latter group of researchers argue that a business is socially responsible to stakeholders and the general public, excluding shareholders. As far as the relationship between a business and the entire society is concerned, the essence of a business is 'a series of institutional arrangements professionally managing investments' (Blair & Roe, 1999: Page 35), whose survival and development depend on whether its relations with other interest groups are dealt with

effectively and efficiently, with shareholders being only one player in the group. The assumption that economic responsibility is parallel to social responsibility has thus overestimated the status of shareholders. An enterprise assuming economic responsibility is essentially exercising a part of their overall social responsibility. In other words, businesses take on CSR whilst making profit, and there is no time sequence between these two missions. Consequently, it is impossible and meaningless to label a certain sort of corporate behaviour as pure economic or pure social responsibility (Godfrey, Merrill & Hansen, 2009).

Although it is a popular conception that changes are often driven by consumers, a systematic study of the relations between consumer spending behaviour and CSR done by Oppewal (2006) failed to find a strong link. In this research, whilst approximately 90 per cent of consumers admit that CSR does influence their purchase decisions, merely 10 per cent turn their belief into action. The results signify that there is considerable difference between stated perception and actual behaviour, which may be an effect of social desirability bias, i.e. respondents provide answers that represent their perceived correct attitudes rather than practices (Smith, 2008). Nonetheless, consumers' demands for better CSR still affect corporate decisions, including the pharmaceutical sector (West, 2012).

2.2.2 Types of CSR

Due to the inconsistent definitions of CSR, actual types, programmes and policies of CSR are also many and various, ranging from charitable donations to integrating this concept into business strategy (Frankental, 2001). Moreover, CSR can be both industry-specific and culture-dependent, making it practically impossible to develop a universal model for all companies to follow (Nijhof, de Bruijn & Honders, 2007).

Lantos (2001) argues that there are three types of CSR policies, namely altruistic, ethical, and strategic. Altruistic CSR programmes help people without direct benefit to the company, e.g. charitable contributions. Ethical CSR aims to minimise the negative influence of the company's business operations. Strategic CSR, which is the highest form of CSR to be identified, seeks to integrate social responsibilities into every mission of the company in order to gain competitive advantage for the entire organisation.

According to this classification, altruistic and ethical CSR can be either proactive or reactive. For instance, the recall of defective or potentially hazardous products may occur either before or after the disaster actually takes place. The former action is

proactive in that it successfully prevents a future issue, and the latter is reactive because it works to address an existing problem.

Strategic CSR is always proactive as it strives to create competitive advantage for the company as early as in the planning phase. Paradoxically, even purely 'proactive' CSR can be reactive to some extent, because the measures are taken in advance only to avert future risks, whose costs can be significantly higher.

Nonetheless, Porter and Kramer (2006) hold that CSR can be either proactive or reactive regardless of its types. Proactive CSR refers to actively preparing for CSR measures to cope with possible situations in the future, whilst reactive CSR attempts to deal with problems only after they are caused.

2.2.3 History of CSR Development

The concept of Corporate Social Responsibility (CSR) was first raised in the 1920s, and it became more popular in the 1960s in the United States and Europe (DeGeorge, 2010). Nonetheless, since the beginning of commercial life, ideas of CSR and business ethics have endlessly been appearing in discussions. The ancient Greek philosopher Aristotle believed that businesses had an intrinsic obligation to support the society in that the latter relied on the former (Melé, 2008).

Sheikh (1996) argues that the concept of CSR cannot be fully understood unless it is placed in a certain historical context. An early example is that in the 1600s, some Christians in Europe refused to invest in companies involved in the trade of weapons, slaves, alcoholic drink, tobacco etc. Modern enterprises emerged after the Industrial Revolution; Laissez-faire and Social Darwinism were predominant thinking in that period. As a result, the viewpoint that profit maximisation was the sole mission and responsibility of businesses was the mainstream belief then. Similarly, concepts regarding CSR in that era were fragmented, unsystematic, and indefinite (Chen, 2006).

One of the earliest proposers of CSR was the British scholar Oliver Sheldon. In *The Philosophy of Management*, Sheldon (1923) claims that business managers have the responsibility to meet the needs of people both within and outside the company, and that CSR includes ethical responsibilities. Owen Young, a manager at General Electric, pointed out in 1929 in his speech that not only shareholders but also employees, customers and the general public had their interest in the company, which should be respected and protected by corporate managers (Young, 1929, cited in Dodd, 1932). The book *Social Responsibilities of the Businessman* by Howard R. Bowen was published in

1953, in which perceived responsibilities of businesspeople were detailed (Bowen, 1953). Murphy (1978) refers the CSR expansion between the Industrial Revolution and the 1950s to 'The Philanthropic Era', in which businesses sought to improve both the well-being and productivity of their employees.

In the 1960s, as the public in Western countries became increasingly aware of labour and environmental issues, enterprises were obliged to pay more attention to CSR. Business schools in American universities also opened related courses to equip future entrepreneurs with the skills to cope with relevant situations (Liu, 1999). In 1976, the International Chamber of Commerce (ICC) published a report titled *The Growing Social Responsibilities of Business*, which covered topics such as collective bargaining, staff training, profit sharing, migrant workers etc (International Chamber of Commerce, 1976). It was also within this period (1968-1973) that enterprises began to deal with socio-political issues such as pollution, workplace discrimination, urban deprivation etc (Murphy, 1978).

The expectations of the society in terms of business ethics and responsibilities have been increasing ever since the 1970s (Lantos, 2001), and 'social reports' of enterprises also emerged roughly between 1970 and 1980 as corporations improved their managerial structures and emphasised business ethics to respond to higher external expectations of CSR (Carroll, 2008).

Frederick (2008) proposes a four-phase model of CSR development as follows:

Table 2-1 Frederick's Four-phase Model of CSR Development

Phases	Periods	Characteristics
CSR1	1950s-1960s	Corporate social stewardship
CSR2	1960s-1970s	Corporate social responsiveness
CSR3	1980s-1990s	Corporate / business ethics (Focusing on establishing a sound business environment for the promotion of ethics, which means enterprises integrate CSR-related elements into their strategy, values and culture.)
CSR4	1990s-2000s	Corporate global citizenship

Source: Adapted from Frederick, 2008

West (2012) argues that the above linear timing only reflects rough changes in the business and political environment instead of the practices of enterprises. The logic is: if all CSR-issues had already been effectively solved, there would definitely not be such

strong societal push for better CSR, as opposed to facts. Besides, the above model was developed based on the CSR evolvement in the United States, which may not represent the cases in other countries as their economic, social, political, and cultural features were ignored. In addition, differences amongst individual corporations have also led to the fact that not all companies followed the same 'development route' of CSR.

A survey carried out by Bennett, Gobhai, O'Reilly & Welch (2009) on European consumers finds out that 73 per cent of the respondents believe that enterprises should publish CSR reports, whilst the investigation of Fox (2007) reveals that 91 per cent of human resources managers in the US admit that their companies are involved in at least some types of CSR activities, mainly in the forms of volunteering and philanthropic schemes.

In addition to the opinions supporting the implementation of CSR, there have also been views opposing its adoption, e.g. the debates between Berle and Dodd in the 1930s and between Berle and Manne in the 1960s. Berle (1931) claims that the sole task of managers, who are trustees of shareholders, is to make profit for owners of the company. However, Dodd (1932) argues that companies serve the society and deliver value to shareholders simultaneously, so managers should also be responsible to employees, consumers and the general public. Later in 1954, Berle admitted that the above argument had been settled in favour of Dodd's contention (Berle, 1954).

Manne (1962) holds that corporations have neither rights nor competencies to assume social responsibilities, and the obligations between businesses and the government should be clearly split. Berle (1962) refutes this allegation by announcing that the separation of ownership and management in modern corporations has led to the result that decisions are not always made by shareholders. Managers do not take social responsibilities only for the interest of themselves or shareholders, instead the expectations of players in the community should be respected as enterprises are essentially members of the society.

Besides the above two debates, some scholars are also opponents of CSR, for example, Nobel laureates in economics Friedrich Hayek and Milton Friedman, as well as the Harvard professor Theodore Levitt. Hayek (1969) holds the idea that the only mission of a company is to gain long-term profit for its shareholders, and taking on social responsibility may distract managers from their core duties. However, Hayek failed to demonstrate the alleged negative correlation between CSR and long-term financial performance, thereby making his opposition to CSR untenable. Friedman (1970) has a

similar notion, adding that CSR also harms the basis of free society. Nonetheless, Friedman changed his view in 1989, arguing that CSR and profit maximisation can coexist as long as the former brings direct economic benefits to the corporation, or when it is the shareholders' common will to exercise CSR (Johnson, 1989). Levitt (1958) claims that acceptance of CSR may hinder the diversity of values in a democracy, and it is dangerous and naive to expect enterprises to shoulder miscellaneous responsibilities.

2.2.4 CSR-related Theories

2.2.4.1 Stakeholder Theory

Amongst all theories concerning CSR, the Stakeholder Theory is one of the most frequently adopted ones for the analysis of related matters. This concept was originally detailed by Freeman (1984) in his book *Strategic Management: A Stakeholder Approach*, dealing with people who affect or are affected by practices of the organisation. On the one hand, the central goal is to achieve maximum overall co-operation within the entire system of stakeholder groups and the objectives of the corporation, and the most efficient strategies for managing stakeholder relations involve efforts which simultaneously deal with issues affecting multiple stakeholders. On the other hand, stakeholder dialogue not only helps to enhance a company's sensitivity to its environment, but also increases the understanding of the background of the dilemmas facing the organisation (Kaptein & van Tulder, 2003).

Chen (2003) holds that an enterprise has various stakeholders that can be clearly identified and classified. Each stakeholder has their own claims, as well as different means of and extent to realisation. Failure to balance the interests may lead to conflicts and eventually undermine the enterprise's competitiveness.

Clarkson (1995) is one of the earliest scholars to employ the Stakeholder Theory in the analysis of CSR, arguing that a company should integrate CSR into their daily operations and that managing CSR is essentially coping with the relationships between the company and its various stakeholders. Researchers holding similar ideas include Charkham (1995) and Wheeler & Maria (1998).

One of the main contributions of the Stakeholder Theory is answering the question 'To whom is the company responsible?' 'Social Responsibility' literally refers to the responsibility to the society, whilst the concept of 'society' is too broad and vague, making operations difficult. After the introduction of the Stakeholder Theory it is clear that companies assume responsibilities to their stakeholders instead of the abstract

'society'. Furthermore, each stakeholder has their own identities and interests, and their claims form the contents of CSR. What is worth noticing is that it is impossible to satisfy all the requirements of stakeholders, and only those that are legal, reasonable, and in accordance with business ethics constitute the rules of CSR.

The Stakeholder Theory has also paved the way for the quantitative measurement of CSR practices. The systematic research framework serves as the theoretical basis, each group of stakeholders is represented by a dimension, each stakeholder being a sub-dimension, the actual contents of CSR are reflected by the items, and the final benchmark is based on the practices measured. This method of assessment is both precise and practicable.

2.2.4.2 Carroll's 4D Model

The four-dimensional conceptual model of corporate performance proposed by Carroll (1979) is one of the most widely used frameworks to analyse CSR. This model comprises four dimensions: economic, legal, ethical, and voluntary responsibilities. The 'voluntary responsibility' was replaced by 'philanthropic responsibility' in 1991 by the same researcher. According to the hierarchy of the four dimensions, the 'pyramid of social responsibility' is presented in Figure 2-1.

Figure 2-1 Carroll's 4D Model

Source: Pinkston & Carroll (1996)

Firstly, economic responsibility is fundamental. A company is an economic organisation in the society, selling products and services for a profit. All other functions are derived from this basis. Secondly, the society has laws and regulations which businesses have to comply with in realising their goals. Thirdly, although some market rules are not written into law, they reflect consumers' expectations of a company. Consequently it is clear that businesses have to shoulder ethical responsibilities. Finally, philanthropic responsibility refers to a form of devotion, e.g. volunteering schemes and charitable donations etc (Carroll, 2008).

Although Carroll's 4D model is repeatedly employed for the explanation of CSR, critics argue that this model has certain limitations (Visser, 2006; Geva, 2008; Zabin, 2013). Firstly, the division between ethical and philanthropic responsibilities is rather vague. Secondly, a large degree of overlap exists between dimensions. For instance, if a manager of a state-owned enterprise (SOE) illegally puts the company's assets into his / her own pocket, this behaviour violates economic responsibility as the interest of the state (shareholder in this case) is harmed. Besides, since such actions are against the law,

legal responsibility is also breached. Thirdly, the conduct of that manager is definitely unethical and subsequently breaks ethical responsibility as well. Admittedly, partitioning CSR according to types of responsibility may cause the objects and contents of the four groups of responsibilities to be rather unclear, which restricts empirical research and applications (Zheng, 2006).

In an attempt to tinker the above shortcomings, Schwartz & Carroll (2003) propose a three-domain approach, in which ethical and philanthropic responsibilities were combined, and the original four domains thus become three. Nonetheless, the fundamental weaknesses of the original model are still not fully addressed.

In addition, empirical studies based on Carroll's 4D Model have also reflected its logical flaw (Zheng, 2006). One attempt to verify this model is the empirical research done by Aupperle, Carroll & Hatfield (1985). Their investigation utilised the 'force-choice survey instrument' and factor analysis, and the results basically supported the model's validity. However, this and most of other empirical studies of the above model focused on the respondents' perceptions of CSR (or 'CSR orientation') rather than their practices, which might have led to reduced credibility and accuracy of the results.

2.2.5 Phases of CSR Development

According to Zadek (2004), there are five stages that all organisations have to pass through in realising CSR-related goals. The first is named the 'defensive' stage, in which enterprises publicly deny their bad practices in response to external criticism. The second is called the 'compliance' stage, and companies comply with laws and regulations in order to protect the corporate image. The third phase is the 'managerial' stage, when businesses realise that top managers are the real problem solvers instead of Public Relations officers. This is followed by the fourth stage, the 'strategic' one, in which it is agreed that a CSR-based business strategy contributes to competitive advantage and long-term success. The final stage is the 'civil' stage, when enterprises serve as active promoters of social responsibilities. However, this 'pathway' can be intricate and iterative.

Lee & Kohler (2010) argue that most international pharmaceutical giants are still in the 'defensive' stage when benchmarked, although those companies themselves claim to be in the strategic or civil stage. Nevertheless, the respondents in this study complained about the unreasonable and unfair standards used for the evaluation.

2.2.6 External Drivers and Internal Motivators of CSR

It is argued that businesses actively adopt or are required to accept CSR for certain reasons, and knowing these reasons paves the way for devising solutions to improving CSR engagement. West (2012) suggests there are both external drivers and internal motivators of CSR.

Oketch (2005) claims that most of the external drivers of CSR come from the balance of interest between businesses and society, i.e. the response to the requirements of social and political stakeholders. The external drivers can be further subcategorised into two groups: Governance and Licence-To-Operate (LTO).

Governance refers to the pressure from political institutions. Governments push enterprises to accept CSR for the common good of society, e.g. complying with laws and regulations, not polluting the environment, generating jobs and taxes, and so forth. Measures include regulations on CSR reporting and co-operation with businesses to develop codes of practices etc. However, 'hard regulations' on CSR are rare, as the contents of CSR can be highly industry-specific, thus hindering the universality of such measures.

The term Licence-To-Operate (LTO) refers to the notion that companies need explicit, implied, or tacit permission from stakeholders in order to operate in the marketplace (Bennett, Gobhai, O'Reilly & Welch, 2009). The Commission of the European Communities (2001) identifies four external drivers that come under the category of LTO: 1) expectations from governments, investors, customers, and the communities in a globalised market; 2) CSR-related factors affecting the decision-making of customers and investors; 3) environmental impact of business activities; 4) transparency of operations as a result of information technology and new media. The fourth driver can be especially meaningful in the current world, as easier access to information makes covering up incidents increasingly difficult (West, 2012).

Besides external drivers, internal motivators also play an extremely important role in the engagement of CSR. Oketch (2005) claims that these include benefits for the enterprise, reducing controversies, and attracting and retaining high-level talents.

Porter & Kramer (2006) name three internal motivators, namely moral obligation, sustainability, and reputation. Moral obligation refers to the notion that companies should also support the community where they operate, e.g. through volunteering and philanthropy. Sustainability is a motivator that focuses on the long-term success of

businesses, and it is based on the philosophy that corporations and the society are interdependent. Reputation denotes that a better name of a company improves its image, sales volume, brand loyalty, and finally, profitability. However, some scholars have questioned this motivator, alleging that CSR is a mere tool for marketing or public relations (Frankental, 2001). One possible solution is to integrate CSR into the corporate strategy to create social benefits along with profit (Lantos, 2001).

Hanlon (2008) argues that companies should actively engage in CSR for two reasons, namely increasing profits and opening up future business areas. For the former, although whether CSR always leads to better financial performance still remains a heated debate, there appears to be indirect benefits that may eventually contribute to financial gains, e.g. higher customer satisfaction, stronger brand loyalty, lower staff turnover rates, increased workforce productivity, and more opportunities to attract socially responsible investing (SRI) etc (Bennett, Gobhai, O'Reilly & Welch, 2009). For the latter, as CSR is considered a tool to relieve conflicts and improve relationships with stakeholders, companies that truly embrace CSR are expected to face fewer obstacles when entering future business areas, where profits may be explored.

Similarly, Kurucz, Colbert & Wheeler (2008) point out four internal drivers out of which businesses actively adopt CSR, namely 1) reducing costs and risks; 2) gaining competitive advantage; 3) enhancing reputation and legitimacy; 4) creating synergistic value.

2.3 CSR within the Pharmaceutical Industry

2.3.1 Perceived Responsibilities

As argued in Section 2.2, all companies should engage in positive CSR practices, which means they have to consider the interest of internal and external stakeholders when performing business activities. In addition, CSR can also be industry and culture-specific. The pharmaceutical industry has always been regarded as a very special sector because these companies produce disease-curing and even life-saving products in a for-profit matter, which involves complex ethical, economic, political, and social issues.

Besides the common responsibilities that all businesses have to assume to their stakeholders (e.g. abiding by laws and regulations, not polluting the environment, protecting employees' rights etc), pharmaceutical companies have to take on extra CSR due to the above-mentioned 'dual role'. Donaldson & Preston (1995) claim that the three

key challenges confronting pharmaceutical companies are the availability, accessibility, and affordability of the medicines they produce. Greve (2008) holds a similar view, arguing that only pharmaceutical companies can solve the above issues owing to their research and market strengths. Leisinger (2009) points out that the core tasks of pharmaceutical companies are to research, develop, and produce quality medicines in a profitable way to improve people's health (e.g. higher life expectancy, greater physical fitness, lower infant mortality, and better treatment methods), and these responsibilities are not shared by other business sectors. These requirements are especially apparent in developing countries, where availability, accessibility, and affordability of medicines and health care services are often largely inadequate (Smith, 2008).

In Chapter 1 it was made clear that pharmaceutical companies in China display their own characteristics, and some are shared by their counterparts in other developing countries (He, Pu, Zhu & Tang, 2010). Zhang (2007) believes that the top CSR priority of Chinese pharmaceutical companies is to guarantee the quality of the medicines they produce, and this is even more significant than all other responsibilities summed up.

The following sections present the perceived responsibilities to each stakeholder.

2.3.1.1 Product Quality

The purpose of using medicines is to cure diseases and improve health, but this cannot be achieved should the quality and safety of the medicines not be guaranteed. Unlike multinational pharmaceutical giants whose products generally enjoy high quality, not all pharmaceutical companies in China always conform to the safety and quality regulations during their operations. Breaches of safety rules have already led to serious consequences, with examples mentioned in Chapter 1. The common direct reason of those incidents was failure to strictly implement Good Manufacturing Practice (GMP), although most of the pharmaceutical companies involved had already passed compulsory GMP certification (Dong, Huang & Dong, 2009).

Good Manufacturing Practice includes the necessary practices required by organisations in charge of authorisation and licensing for the production and sale of food, medicine, and other pharmaceutical products. GMP lists minimum requirements that a pharmaceutical company must comply with to ensure that their products have acceptable quality and thus minimising risks to people and animals. GMP encompasses the rules that have to be obeyed throughout the whole production process. The 'quality management' in the sense of GMP denotes ensuring quality during every step of the

production chain rather than simply assuring the condition of the final products. In other words, pharmaceutical companies have to guarantee that their ingredients, staff, facilities, production practices, distribution, and quality assurance all meet the standards of GMP. As a result, pharmaceutical companies in every country should adopt GMP or its local equivalent for the quality of the medicines they produce (World Health Organisation, 2015).

In the European Union, the EU-GMP is in place, which has similar requirements to the WHO version of GMP. In the United States, GMPs are enforced by the Food and Drug Administration (FDA) in the name of 'current Good Manufacturing Practices' (cGMP). In China, the first version of GMP was decreed in 1988 by the Chinese Ministry of Health, and later amendments were made in 1992, 1998, and 2010. Since 2004, pharmaceutical companies that fail to pass GMP certification are obliged to halt their production and sale of medicines. Consequently, the number of pharmaceutical companies in China reduced from 6,000 to 4,000. The latest 2010 version of GMP was formulated according to the more strict EU standards, and the number of items increased from 56 to 101, which is expected to raise both product quality and costs. Pharmaceutical companies in China without the 2010 GMP certification had to close by 31 December 2015 (Zou, 2012).

To summarise, producing medicines in strict conformity with GMP is the key to guaranteeing quality. This requires even more emphasis on CSR in China and other developing countries, where the regulation and legal frameworks need much improvement (Guan & Noronha, 2011). For example, before mid-2015 there was no legislation on the forced product recalls in China, and some tainted medical products were still sold in the country then.

2.3.1.2 Direct-to-Consumer Advertising (DTCA)

In addition to guaranteeing product quality, educating end-users in the Direct-to-Consumer-Advertising (DTCA) is also an important aspect of CSR that pharmaceutical companies have to follow. DTCA serves as a marketing or advertising tool of pharmaceutical companies, and the information it carries must be complete, objective, and accurate. Although patients are better informed through such publicity, negative consequences include exaggerated effects, excessive dosage, higher prices due to marketing costs, and self-diagnosis (van de Pol & de Bakker, 2010). Exaggerating the perceived effects of medicines is a serious and rampant problem in China, and many

pharmaceutical companies (especially those producing dietary supplements) make unrealistic promises to consumers but are rarely prosecuted due to scant regulation (Han, 2013). Although China's *Advertising Law* prohibits exaggeration of product effect, loopholes in the law are often taken advantage of and the enforcement of law can be lenient (Han, 2013).

In a research done by Santiago, Bucher & Nordmann (2008) in Switzerland, 53 per cent of all examined pharmaceutical advertisements in six major Swiss medical journals are not supported by their cited studies or are based on possibly biased data. The above scholars also gave the suggestion that doctors and patients should not trust the claims in those advertisements regardless of their reference to 'scientific studies'. Few researchers have carried out similar investigation on the Chinese market, but the situation in China might be even worse where the rule of law is relatively inadequate compared to Europe.

China's pharmaceutical market is unique in that it follows a 'double-track system', i.e. Western medicine and Traditional Chinese Medicine (TCM) coexist. For thousands of years, TCM tends to use equivocal and metaphorical language in expressing the effect, and the ingredients are even confidential, which is in stark contrast with Western medicine and international standards. Besides, TCM has considerable influence on the Chinese culture and may have played a role in the exaggeration of the claimed effects of medicine (Chu, 2011).

Giving consumers complete, objective, and accurate information regarding the effect of the medicine not only increases the credibility and reputation of the company but also reduces the chances for lawsuits. This may also improve the relationship with doctors as the latter can develop more trust in the former (Parker & Pettijohn, 2003).

2.3.1.3 Commercial Bribery Prevention

In order to promote sales, some pharmaceutical companies offer doctors 'kickbacks' in the forms of cash, valuable gifts, or all-expenses-paid holidays etc. Such behaviour seriously violates law and CSR and is strictly forbidden by Clause 2, Article 93 of China's *Criminal Law*. In order to increase the commission, some doctors prescribe unnecessary medicines or examinations, which not only harm the health of patients but also waste their money. In such a mechanism, medicines are chosen according to the sum of commission rather than suitability.

Both multinational and Chinese pharmaceutical companies have been involved in

the bribery of doctors for the promotion of their products. The British pharmaceutical giant GlaxoSmithKline (GSK) bribed thousands of doctors in China, and about 30 per cent of the sales price of their medicines was given to doctors and hospitals as 'commission'. In 2014 the company was fined three billion RMB (approx. 450 million euros) by a local court, which was the largest sum of fine in China's history (BBC, 2014). Moreover, the French company Sanofi and the Swiss company Hoffmann-La Roche also faced similar accusations (Le Figaro, 2013; Reuters, 2013; Bloomberg, 2014).

Lei (2006) argues that the root of such bribery is the excessive profit of medicines, and patients and other consumers are the real victims both in terms of health and finance. Medical insurance institutions are also influenced as their expenditure increases due to improper prescription. As a result, banning commercial bribery is a significant aspect of CSR for pharmaceutical companies.

2.3.1.4 Environment and Safety

For every company on earth, not polluting the environment is one of the most fundamental aspects of CSR. The pharmaceutical industry is in fact both a manufacturing industry and a chemical industry, which are usually regarded as heavy polluters of water, land, and air, especially those specialised in producing Active Pharmaceutical Ingredients (APIs). China is currently the largest producer of APIs in the world, accounting for 40 per cent of their global production (China Pharmaceuticals Online, 2014). Such large-scale manufacture has caused serious contamination in some areas, threatening the safety of human beings and nature. As a result, many laws and regulations have been introduced to reduce the use of potential polluters and their discharge (Oger, 2009).

According to Chang (2008), six metric tonnes of chemical substances are needed to produce one metric tonne of APIs on average, and about 80 per cent of used raw materials are discharged as solid, water, or air waste. Many of the pharmaceutical companies in China are SMEs and lack the resources needed to improve their relatively outdated production facilities and technologies, which leads to the fact that they become heavy polluters.

One possible reason why pharmaceutical companies in China lack the incentive to reduce pollution is that the cost of dealing with waste is often much higher than the fine they face if the enterprise discharges waste without processing at all. Besides, local governments in China often lay more emphasis on economic development than

environmental protection, and corruption also reduces their motivation to enforce relevant laws. Such a 'lenient' situation has attracted many multinational pharmaceutical giants to relocate their production facilities for APIs to China and other developing countries (Coetsier, Lin, Roig & Touraud, 2006).

Besides pollution, pharmaceutical companies are often major consumers of water and energy, so they have the responsibility to conserve natural resources and properly process water waste to make sure that the discharged liquids do not contaminate the nature. Moreover, efforts to save resources, e.g. green buildings, packaging reduction, material recycling etc also cut down spending, thereby increasing profits of the company (Oger, 2009).

2.3.1.5 Pricing and Accessibility

As stated at the beginning of Section 2.3.1, improving affordability and accessibility of medicine are important aspects of CSR for pharmaceutical companies. However, the pricing of pharmaceutical products often causes controversy, both in developed and developing countries. Pharmaceutical companies selling patented medicine actually enjoy a monopolistic status, and the revenue generated before the patent expires is considered compensation for their R&D costs; this pricing strategy is basically market-based and acceptable if no excessive barrier is generated to patient access (Puig-Junoy, 2005).

Dukes (2006) argues that the pharmaceutical sector has become one of the most profitable business fields even during recessions. For instance, in 2014, Wal-Mart had US$476 billion in revenue and a net profit of US$15.9 billion, whilst Pfizer had US$50 billion in revenue and a net profit of US$9.1 billion (Forbes, 2015). Unreasonable prices of medicine not only place more burden on the health care system but also cause inaccessibility of necessary medicine and medical treatment, especially in developing countries and amongst disadvantaged groups (Dukes, 2006).

According to the Universal Declaration of Human Rights of the United Nations (1948), everyone has the right to good health, and access to proper medical services and medicine is considered a core value. As a result, pharmaceutical companies do have the responsibility to improve accessibility of medicine and integrate it into their business strategies. However, the issue of accessibility is extremely complex and involves many stakeholders, and pharmaceutical companies alone may not solve this problem. Leisinger (2009) points out that systemic changes and political reforms are indispensable

to improve accessibility, and any unilateral efforts are likely to bring merely temporary advancement that may quickly be offset by rooted limitations of the system. Bluestone, Heaton & Lewis (2002) hold that current R&D and patent systems have to undergo substantial reforms to enhance accessibility in the long run.

On the one hand, there is no denying that pharmaceutical companies, who are one of the core players in medicine accessibility, have both the responsibility and capability to assist in its improvement. On the other hand, it should also be noted that inadequate accessibility to medical services and medicines is usually caused by economic deprivation, poor health care infrastructure, and lack of well-trained medical staff, which are normally beyond the scope of pharmaceutical companies' strength (West, 2012).

2.3.1.6 Innovation and Patents

Besides accessibility and affordability, inventing new medicine to cure diseases is also within the scope of pharmaceutical companies' CSR. Many subtle issues are involved during the process of drug development and patenting, e.g. clinical trials, animal test, genetic research etc.

According to the guidelines published by the Pharmaceutical Research and Manufacturers of America (2010), four stages have to be gone through before a type of medicine hits the market, namely discovery, preclinical testing, clinical trials, and evaluation, and this process usually takes 15 years on average and incurs R&D costs of around US$800 million, although the actual expenditure can vary significantly according to many determinants. Patented drugs are then sold at a relatively high price to recover the previous R&D costs.

Nonetheless, in recent years, pharmaceutical companies are increasingly reliant on external public funded research and then purchase their patents, thus effectively trimming R&D expenditure. As a result, initial R&D costs may no longer adequately justify the high prices of patented drugs. Furthermore, many 'new drugs' are actually near-duplicates of existing ones, with only slight modification to ingredients, but new patents can be applied and high prices sustained. As far as finance is concerned, developing those so-called 'new drugs' accounts for 80 per cent of relevant R&D costs (Dukes, 2006), and it violates the spirit of innovation; instead pharmaceutical companies should strive to develop truly innovative medicines that alleviate the suffering of patients (Saul, 2005).

Animal testing is another sensitive topic in the CSR of pharmaceutical companies.

Although the advancement of science and technology has lowered dependency on animal testing, it still provides critical indications on how a living body reacts to a certain kind of medical treatment. Furthermore, animal testing must be passed before testing on humans can be performed. Alternatives to animal testing, such as computer simulation, do not provide all data needed to analyse the effect as the living body is too complex for existing software programs to simulate (Taylor, 2005). However, for ethical reasons, pharmaceutical companies should still minimise animal testing and enforce strict policies to respect the animals being used for the trials and ease their sufferings.

Compared to animal testing, clinical trials are even more sensitive. Proper principles have to be strictly followed to protect patients involved in the trials and to ensure the ethics, transparency, and objectivity of the study (Weber, 2006). Patients participating in the research must be fully informed about the possible consequences of the trial, and their safety, privacy, and full consent must be secured before any study is carried out. These rules are especially significant in developing countries where people might accept these experiments out of financial reasons (Cook & Hoas, 2015).

2.3.1.7 Philanthropy

According to Carroll's 4D Model described in Section 2.2.4.2, enterprises also have philanthropic responsibilities, which lie at the top of the 'Pyramid of CSR'. In the pharmaceutical sector, typical CSR activities that fall into this category include drug donation to developing countries or disadvantaged patient groups, giving to the local community, supporting education and research, and joining various charity programmes etc. These efforts are usually aimed at improving access to health care, as well as the research capacity and social image of the pharmaceutical company, which indirectly enhance their reputation and brand loyalty (Logerais, 2014).

2.3.2 Stakeholders of the Pharmaceutical Industry

As far as the pharmaceutical industry is concerned, there are various stakeholders who have different identities and interests, including shareholders, employees, creditors, suppliers, distributors, patients, hospitals, doctors, NGOs, competitors, medical insurance institutions, policymakers, regulatory bodies, local communities, the environment, news media etc. Depending on the extent to which pharmaceutical companies may influence or be influenced, varying emphases should be placed during interactions with them.

After stakeholders are identified, the following step is to put them into different

categories. Mitchell, Agle & Wood (1997) propose the 'Salience Model' to analyse stakeholders according to three parameters, namely power, legitimacy, and urgency. Eight categories of stakeholders are then proposed: core, dominant, dependent, dangerous, latent, demanding, discretionary, and non-stakeholders. In addition to identification of stakeholders, this model also clearly shows their degrees of engagement to the organisation. The empirical studies of Agle, Mitchell & Sonnenfeld (1999), Knut & Svein (2001) and Chen & Jia (2004) carried out on US, Norwegian, and Chinese companies respectively all supported the validity of the above-mentioned model.

Chen & Jia (2004) name ten stakeholders for all enterprises, namely shareholders, managers, employees, creditors, suppliers, distributors, consumers, the government, the environment and the local community. These stakeholders are further labelled core, latent, or marginal. Zheng (2006) proposes three dimensions for the practices of CSR, which are the responsibilities for Internal Parties, External Partners, and Public Entities. 'Internal Parties' refers to shareholders, managers, and employees. 'External Partners' encompasses creditors, suppliers, distributors, and consumers. 'Public Entities' denotes the government, the environment, and the local community.

Shareholders, managers, and employees are the real representatives and direct controllers of the enterprise, and meeting their needs is the most fundamental form of CSR. Hence Chen & Jia (2004) place them in the group of core stakeholders. Creditors, suppliers, distributors, and consumers are External Partners of the enterprise, and interactions with them constitute the main business activities. Therefore, establishing and maintaining good relations with them is a precondition for surviving market competition. What differentiates them from Internal Parties is the fact that these partners are also independent entities on the market, and they interact with the company according to market rules. Thus CSR for them is largely represented by credit. The government, the environment, and the local community are also external to the company, but they are different from business partners as the former are Public Entities but the latter are market entities. CSR for Public Entities is realised through various social mechanisms (Zheng, 2006).

The above method of grouping the stakeholders shares similarities with the viewpoint of Wood & Jones (1995). They believe that the society exerts its control over businesses through stakeholders. Such control can be carried out via public policy (i.e. laws and regulations, litigations), the market (i.e. the expectations and behaviours of consumers, shareholders, employees, suppliers, competitors) and norms (i.e. morality,

values, reputation). The direct reason why companies assume CSR is the society's control over them, and the practices of CSR are responses to the expectations of stakeholders, or efforts to satisfy their claims. The above three types of social control over enterprises roughly correspond to their CSR for Public Entities, External Partners and Internal Parties.

The theoretical model of the preview comprises three dimensions, namely CSR for Internal Parties, CSR for External Partners, and CSR for Public Entities. Every dimension is further divided into sub-dimensions, and each sub-dimension represents a stakeholder. The reasonable claims of each stakeholder constitute the contents of CSR practices. This model adopts the stakeholder theory as the only norm in grouping various responsibilities, and it distinguishes three types of CSR. Hence the shortcomings of Carroll's 4D model are alleviated and a sound theoretical base is formed for the measurement of variables.

2.3.3 Responsibilities to Each Stakeholder

In the preceding section it is made clear that pharmaceutical companies ought to assume CSR to stakeholders in the groups of Internal Parties, External Partners, and Public Entities. The respective responsibilities are explained in the following sections.

2.3.3.1 Responsibilities to Internal Parties

The 'Internal Parties' of a pharmaceutical company are their shareholders, managers, and employees.

Shareholders are the investors of a company, and their control over the enterprise as well as return on investment has to be ensured. On the one hand, it is assumed that CSR and maximising profit are intertwined in the marketplace of the 21st century, as satisfaction of the claims of other stakeholders reduces obstacles in business operations and contributes to long-term success of a company, thereby bringing lasting profit to shareholders. On the other hand, although small and medium shareholders usually have less bargaining power, their interests should be safeguarded as equality amongst shareholders reflects a sort of management commitment (Sjöström, 2010). Furthermore, dividends have to be distributed in time according to laws and rules.

Managers are responsible for the running of companies, and they also draft and implement CSR policies. As a result, they deserve adequate empowerment and reasonable remuneration for their services.

Human resources are critical to the competitiveness of companies, and there is a

positive correlation between the satisfaction of employees and that of customers (Grigoroudis, Tsitsiridi & Zopounidis, 2013). Moreover, there are both economic and psychological bonds between employees and the enterprise (Argyris, 1964). As a result, enterprises also take on various CSR to their employees, including reasonable salaries, equal treatment and non-discrimination for every employee, training programmes, opportunities for pay rise and promotion, creation of a safe and pleasant work environment, and employee participation in decision-making etc (Haski-Leventhal, Roza & Meijs, 2015). In China, the protection of workers' rights is relatively insufficient, with forced overtime work without payment, underpayment of salaries, evasion of social insurance, and not signing the labour contract being outstanding problems, especially in small and medium enterprises (SMEs). Besides, deficiencies in the local laws have led to the fact that discrimination on the grounds of race, age, gender, education, and *hukou* (permit of permanent residence) are all technically legal in China (Chang, 2008).

2.3.3.2 Responsibilities to External Partners

For a pharmaceutical company, main External Partners include suppliers, patients, and doctors. Responsibilities for each are set out below.

Generally, suppliers are partners rather than competitors. A smaller number of suppliers are often easier and more efficiently to manage. Leppelt, Foerstl & Hartmann (2013) argue that the CSR for suppliers include at least prompt payment for goods, establishment of strategic alliances, and critical information sharing. In addition, suppliers should be demanded and supervised to protect the environment and workers' rights, especially those from developing countries.

It is made clear in previous sections that pharmaceutical companies must take responsibilities to patients, including guaranteeing product quality, DTCA-related matters, as well as availability, accessibility, and affordability issues. Patients are the end-users of the products and services offered by pharmaceutical companies, and the interests of Internal Parties (shareholders, managers and employees) cannot be achieved failing the 'money vote' of consumers. High quality standards must be enforced throughout all processes in the development, trial, production, transport, and storage of medicine, and patients should be advised of the expected effect and the worst possible side effects of the drugs they receive. In direct marketing to patients, no exaggeration of proclaimed effect or misleading suggestion is allowed. Furthermore, truly innovative drugs should be developed rather than slightly modifying current formulae to produce

the so-called 'new drugs' with the sole purpose of renewing patents and maintaining high prices. Reasonable rates should be set and drug donation is encouraged, especially in developing countries (Jamali, 2010).

One of the most important aspects of CSR that pharmaceutical companies ought to assume to doctors is the delivery of accurate and complete information regarding the medicine, especially any possible side effects it might carry. Besides, pharmaceutical companies should never attempt to promote sales by bribing doctors in any form, as such behaviour not only seriously violates CSR but also law (Russo, 2014).

2.3.3.3 Responsibilities to Public Entities

In addition to Internal Parties and External Partners, Public Entities, including the government, the environment, and the local community, also deserve proper CSR efforts by pharmaceutical companies.

To the government, pharmaceutical companies should obey all laws and regulations, especially payment of tax. Furthermore, they must also disclose any information that may affect the well-being of society or the environment, e.g. medicine recall, side effects, pollution etc. Such practices not only increase government and public trust but also reduce the chance of fines should serious incidents occur (Zhang, 2013).

Traditionally pharmaceutical companies are considered big polluters of the environment, especially those producing Active Pharmaceutical Ingredients (APIs). China is the largest producer of APIs in the world so relevant contamination cannot be ignored. These companies ought to minimise the negative influence on the environment during their production operations and strictly follow corresponding codes. Saving energy and raw materials using better technologies and recycled stuff both reduces costs and improves environmental friendliness. The concept of environmental conservation must also be integrated into every process, including R&D, raw material selection and procurement, production, distribution, storage, and recycle of unused drugs. In case of serious pollution, pharmaceutical companies face not only fine but also damage to reputation, which may negatively impact all stakeholders (Coetsier, Lin, Roig & Touraud, 2007). Ding & Liang (2006) hold the idea that complying with ISO14000 may effectively enhance environmental performance of pharmaceutical companies in China.

The local community offers pharmaceutical companies land, labour, energy, and various facilities, so they also hold a stake in related operations. The research of Jamali & Mirshak (2007) shows that responsibilities to the local community include tax

payment, environmental protection, job generation, and philanthropy, and these display certain overlapping with obligations to the government and the environment.

2.3.4 Future CSR Strategies for the Pharmaceutical Industry

2.3.4.1 A Comprehensive CSR Strategy

Although most pharmaceutical companies have already acknowledged the importance of CSR and engaged in relevant activities, a comprehensive CSR strategy, which refers to shouldering responsibilities to as many stakeholders as possible, may deliver the synergistic effects that fragmented efforts usually fail to achieve (West, 2012). The perceived responsibilities to key stakeholders which pharmaceutical companies ought to assume are already listed in Section 2.3.1. Parker (2007) proposes six areas that deserve special concern, namely 1) more transparency in the development, production, and marketing of pharmaceutical products; 2) strict conformity to environment-related laws, regulations, and industrial codes; 3) delivery of truly innovative new drugs; 4) reasonable prices for patients, especially those in developing countries, by outsourcing and using publicly-funded research to lower R&D costs; 5) open dialogues with stakeholders to address their expectations; 6) a fair human resources strategy that facilitates equal opportunities, personal development, and workplace safety.

Many multinational pharmaceutical companies are exploring business opportunities in emerging markets, where 70 per cent of the annual global growth is expected (Rockoff, 2010). However, when operating in developing countries, CSR issues become more meaningful as the rule of law may be less mature there. Besides, pharmaceutical companies may also feel less external pressure to engage in CSR activities whilst operating in those markets, so a comprehensive CSR strategy becomes even more essential.

2.3.4.2 Benchmarking and Transparency

The study of Lee & Kohler (2010) demonstrates that benchmarking and transparency are the most important two incentives for the pharmaceutical industry to improve their CSR, whereas the prerequisite of conducting objective benchmarking is the availability of a well-designed instrument to find out the dimensions and content of the CSR in this sector.

External benchmarking may also encourage competition amongst pharmaceutical companies, thereby raising transparency regarding their operations. Nussbaum (2009) holds the idea that transparency increases the credibility of CSR reports as well as the

authenticity of CSR communication. The better reputation brought by higher levels of transparency may serve as a source of competitive advantage due to stronger possibility to increase sales and attract investment from socially responsible investors. The assumed effect of benchmarking and transparency on the improvement of CSR practices further justifies the development of a proper scale to measure the social performance of pharmaceutical companies in China.

2.4 CSR Development in China

2.4.1 CSR in the Chinese Context

As a developing country and the second largest economy in the world, China's CSR reveals a lot of characteristics due to its unique cultural, historical, political, economic, and social environment that cannot be ignored whilst analysing its CSR situation. The concept of CSR began in China in the mid-1990s when multinational companies inspected the social responsibility practices of their suppliers and Original-Equipment Manufacturing (OEM) facilities in China. Such behaviour was regarded as 'trade barrier' or even 'discrimination' in that period, but now this viewpoint has few supporters (Zheng, 2006).

In recent years, CSR has been gaining popularity rapidly in China. Merely 77 enterprises in China published their CSR reports in 2007, but in 2010 the number was already 700 and in 2013 it jumped to over 4,000 (Wei, 2015).

In addition to the growing attention to CSR, its development in China has also shown its own trends. Li (2012) argues that Chinese companies are now moving from simply publishing CSR reports to integrating CSR into their business strategy as they are increasingly aware of the link between CSR and competitive advantage. Without this awareness and pressure from stakeholders, CSR may be marginalised or overlooked by companies.

Another prominent difference is that the power of Non-Governmental Organisations (NGOs), which is usually an important stakeholder in the West, is very small in China. Due to political reasons all NGOs were technically illegal in China until 22 December 2014, and patient groups often face police harassment or are even forced to disband only to maintain the so-called 'social stability and harmony' (The Washington Post, 2015). In China, the two main driving forces of CSR are purchasing policies of foreign companies and government regulations, whereas other stakeholders are far less

influential. Besides, some fundamental human rights-related values about CSR remain political taboos in China, including freedom of association and expression, eliminating employment discrimination etc (Li, 2012).

Cultural difference between China and the West has also led to dissimilar perceptions on some aspects of CSR. For example, Chinese workers can go on strike for not being required to work overtime, which can be utterly unbelievable in other cultural settings. Another example is that drug trial on animals is generally not considered unethical in China, although this topic can be highly sensitive in Europe and North America (He, Liu & Liu, 2014).

2.4.2 Characteristics of China's Pharmaceutical Industry

As of 2014 there were around 4,000 pharmaceutical companies in China, producing approximately 1,500 kinds of APIs, with a total weight of 430,000 metric tonnes, making China the largest producer and exporter of APIs in the world. Moreover, China has the second largest gross output of drugs on the globe only after the United States (Chinese Ministry of Health, 2014).

The pharmaceutical sector is also one of the fastest growing industries in China, with an average annual growth of about 20 per cent from 1978 to 2010. However, many of the pharmaceutical companies in China are SMEs, whose financial and technological strengths are limited. 97 per cent of medicine produced in the country are Generic Drugs (GDs), i.e. drugs whose patents have expired. R&D investment is far below international counterparts' and truly innovative drugs are very few. Lack of innovation has led to homogeneity and low added-value of products; some common medicine, such as gentamycin, metronidazole, and paracetamol, are produced by more than 1,000 companies simultaneously (China Industrial Online, 2014).

In contrast to the large export volume of APIs, the international sale of pharmaceutical preparations only accounts for a fraction of the total production. Analysts argue that quality issue is the main reason why Chinese-made preparations have relatively low international acceptance (Wang, 2008).

2.4.3 The Chinese Regulatory Framework for Medicine – Function and Influence

As the regulatory process of a country may influence operations of enterprises as well as their stakeholder relationships, it is necessary to briefly analyse the regulatory framework for medicine in China to provide more information regarding the CSR

practices of pharmaceutical companies.

Article 5 of the *Law on Drugs Management of the People's Republic of China* stipulates that China's State Council is responsible for the nationwide management of medical products, and the provincial and municipal governments carry out the relevant inspection and management duties. Departments in charge of pricing, health, Traditional Chinese Medicine, business administration, customs etc work under the umbrella of the People's Government of the same level. For medical products, both the conferring of licence and the inspection of quality come under the responsibility of the China Food and Drug Administration (CFDA) (Yang & Shao, 2013).

In China, only Over-The-Counter (OTC) medicines are allowed to be advertised, and the law strictly forbids the advertising of prescription drugs and those treating tumour, AIDS, or Sexually Transmitted Diseases (STDs). Regulating the advertisement of drugs falls under the joint jurisdiction of the CFDA and the Bureau of Business Administration, and it is illegal to advertise pharmaceutical products without the prior permit of the above two departments (Cao & Xiong, 2007).

As far as public medical insurance is concerned, approximately 95 per cent of China's 1.3 billion citizens were covered by state basic medical insurance at the end of 2011, and this percentage was merely 29 per cent in 2003. China's national medical insurance funds showed huge surplus, and the amount was 760 billion RMB (about 113 billion euros) at the end of 2013. Moreover, at least thousands of insurance plans with greatly varying coverage scopes coexist in the country, and each province, city, and even district has their own coverage plans. Different occupations can also lead to dissimilar levels of medical treatment and the proportion of costs that can be reimbursed. Generally, retired government officials, employees in the public sector, and soldiers on active duty enjoy the most comprehensive medical coverage (Liu, 2010).

2.5 Standards and Evaluation Systems of CSR Practices

Researchers have proposed various methods to evaluate CSR perceptions and practices, and some approaches are specifically devised only for a certain culture (e.g. Chinese companies) or industry (e.g. the pharmaceutical sector). However, none of the methodologies of assessing CSR is without limitation, and each may suit a different context. Consequently, there is no single best technique to measure CSR (Wolfe & Aupperle, 1991).

Waddock & Graves (1997) propose five methods to appraise CSR, which include forced-choice survey instruments, reputation scales and indices, case studies, perception and behaviour-based investigation, and content analysis of publications. Turker (2009) names four approaches to assessing CSR, namely databases or reputation indices, single or multiple-issue indicators, content assessment of documents, and scales to measure CSR at the individual or organisational level. Other techniques include corporate annual reports analysis, the Toxics Release Inventory (TRI) assessment tool developed by Griffin & Mahon (1997) etc. On the one hand, research shows that there is no notable connection between the alleged contents in the annual reports and the real corporate social performance (Freedman & Wasley, 1990). On the other hand, the only stakeholder represented in the TRI assessment tool is the environment, which largely limits its general applicability as the tertiary industry usually produces little toxics.

Professional databases dedicated to assessing CSR provide credible, professional, objective, complete, and latest data regarding the CSR of enterprises, e.g. the US-based Fortune Index, KLD and Innovest, French-based ARESE and Vigeo, UK-based PIRC etc. Unfortunately, the vast majority of these databases are based in developed countries and only contain data for their local companies. Currently there is no such database in China, so it is impossible to collect CSR-related data concerning Chinese pharmaceutical companies using this approach.

The 'Access to Medicine Index' (ATM Index) is an independent project that ranks the world's Top 20 research-oriented pharmaceutical companies according to their contribution to the improvement of access to medicine in developing countries. This programme examines how pharmaceutical companies deal with availability, accessibility, affordability, and acceptability issues regarding their products and services and is aimed at enhancing CSR by encouraging transparency, benchmarking, and stakeholder dialogue. As far as methodology is concerned, the ATM Index utilises a weighted analytical framework to collect and assess data, and seven dimensions known as 'Technical Areas' are adopted, covering general access to medicine, public policy and market influence, research and development, pricing, manufacturing and distribution, patents and licensing, and capability advancement. Under each of the dimension, four aspects named 'Strategic Pillars' are assessed: commitment, transparency, performance, and innovation. The ATM Index is published every two years, and methodology is updated accordingly to respond to the changing global environment (Access to Medicine Foundation, 2014).

The ATM Index provides valuable insights into the CSR that pharmaceutical companies ought to assume to patients, especially those in developing countries, and its methodology is relatively fair and rigorous. However, as discussed in previous sections, patients are not the only group of stakeholders whose claims should be catered to. Other key stakeholders, e.g. employees, doctors, and the environment, are not represented in this Index. Moreover, the results of the ATM Index are based on the data provided by pharmaceutical companies themselves, which may not entirely reflect the truth as businesses usually have the propensity to deliberately hide any negative information. Finally, this Index might not fully apply to the Chinese context, as no Chinese pharmaceutical company was included in its evaluation, whilst the pharmaceutical sector in China displays many unique characteristics, which have been detailed in Section 2.4.2.

Using scales to measure the CSR perceptions of individuals or the CSR practices of organisations is another frequently-adopted method. Each dimension in the theoretical model corresponds to a set of items, and a questionnaire is designed to collect information on the perception of respondents. A final benchmark is given after calculating the total or mean scores of items and dimensions. Aupperle, Carroll & Hatfield (1985) developed the Corporate Social Responsibility Orientation (CSRO) Scale based on Carroll's 4D Model, and empirical studies of which have also been carried out. Although this scale is frequently used, it actually measures the CSR-related values of managers rather than CSR practices of organisations. In other words, the focus is on 'what should be done' instead of 'what has been done'. A few other scales, e.g. the one developed by Quazi & O'Brien (2000) and the Perceived Role of Ethics and Social Responsibility (PRESOR), though also widely in use, expose the same shortcoming.

The scale developed by Maignan & Ferrell (2000) is one of the few ones aimed at measuring corporate citizenship, i.e. how well enterprises assume their economic, legal, ethical, and discretionary responsibilities to their stakeholders. This tool combines Carroll's 4D Model and the stakeholder theory, and empirical studies performed in the United States and France both supported its validity. Nevertheless, this scale only incorporates three stakeholders (employees, consumers, and the public), whereas CSR for other parties are not included. Zheng (2006) designed a similar scale measuring the CSR practices of Chinese companies, but it may not effectively apply to the pharmaceutical sector as some of its main stakeholders (e.g. patients and doctors) are not represented.

To sum up, using a scale to measure the CSR practices of pharmaceutical

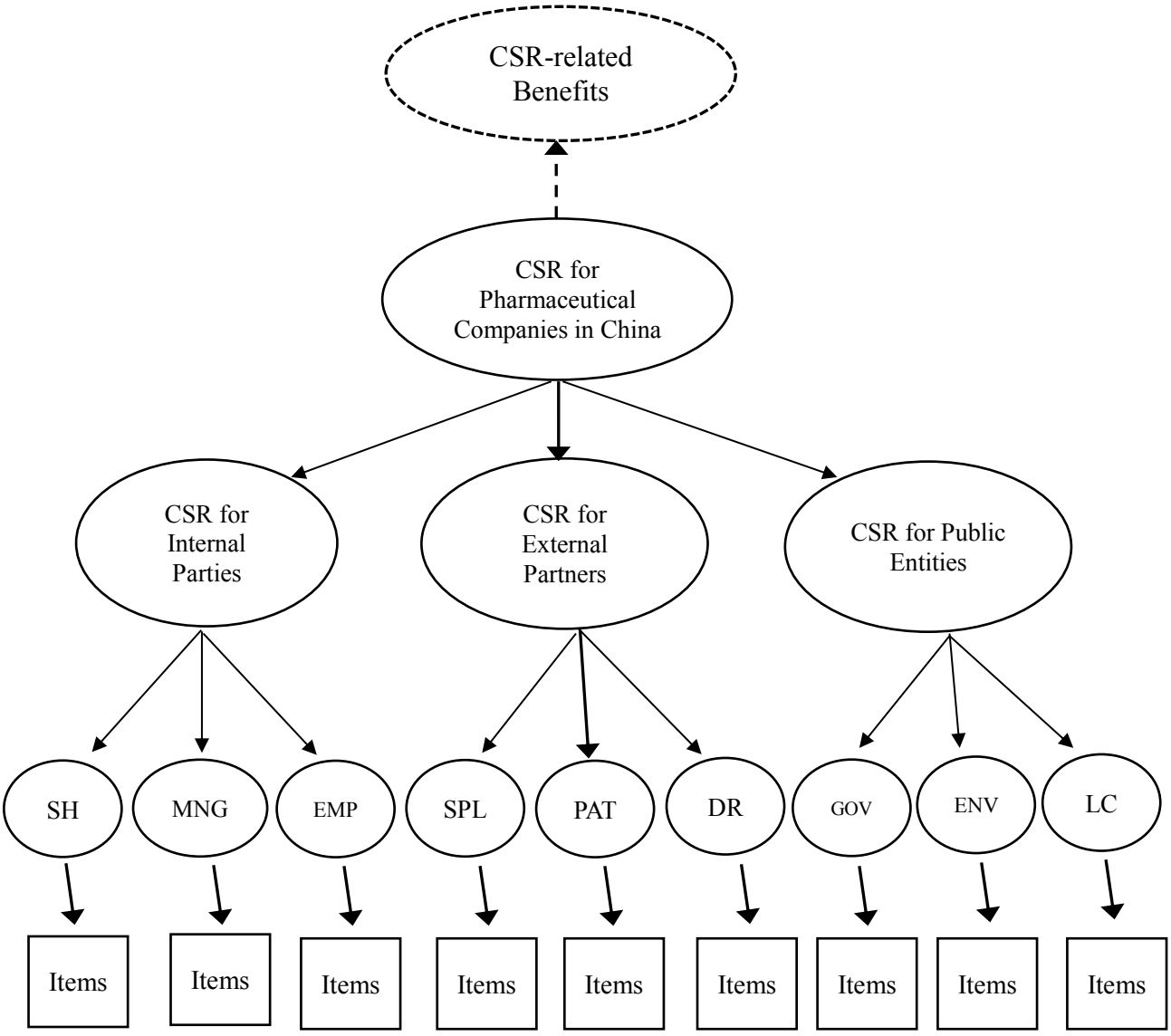
companies in China is the most viable solution, but a proper instrument is still absent in the literature. Thus it would be meaningful to develop a new and tailored one for the purpose of this research.

2.6 Conceptual Model

From the above literature review it is now assumed that CSR for pharmaceutical companies in China comprises three dimensions, namely CSR for Internal Parties, CSR for External Partners, and CSR for Public Entities. Under each of these three dimensions there exist three sub-dimensions, and there are nine sub-dimensions in total, which correspond to the nine key stakeholders. The responsibility to each stakeholder is represented by a number of items. Satisfactory implementation of CSR may produce related benefits.

The following conceptual model is considered to be a graphical presentation of the real world, and it can be utilised to analyse the situation in a more intuitive way. The proposed conceptual model depicting the CSR practices of pharmaceutical companies in China is presented in Figure 2-2.

Figure 2-2 Conceptual Model of Chinese Pharmaceutical Companies' CSR Practices



Note: SH = Shareholders, MNG = Managers, EMP = Employees, SPL = Suppliers
PAT = Patients, DR = Doctors, GOV = Government, ENV = Environment, LC= Local Community

2.7 Summary

The literature review began with a critical analysis of CSR in the contemporary business environment, including its definition, types, history of development, and relevant theories and models, and then its external drivers and internal motivators were identified. CSR within the pharmaceutical industry was studied immediately thereafter, especially the perceived responsibilities to each stakeholder. Existing standards and evaluation systems of CSR were examined, and it was concluded that a proper scale to measure the CSR performance of Chinese pharmaceutical companies was meaningful

and feasible, and it still remained a gap in the literature. This was followed by a brief introduction on the CSR in China's social, economic, historical, and cultural context. Finally a conceptual model was proposed to represent the simplified real world for analytical purposes. Now the following step is to develop a scientific methodology to answer the research questions of this study.

Chapter 3: Methodology

3.1 Population Description

Nationwide there were 3,988 pharmaceutical companies in China in 2014, and also in every province of the country. Both APIs and pharmaceutical preparations were produced, with 97 per cent of the latter being generic drugs. China's pharmaceutical industry enjoys an average annual growth of around 20 per cent since the end of the 1970s, and now it has the second largest gross output of medicines in the world only after the United States (Chinese Ministry of Health, 2014).

Geographically most pharmaceutical companies in the country are located in the East and the North, with relatively few ones in the West and the Central. According to the *2015 Yearbook of China's Pharmaceutical Industry* published by the Chinese Ministry of Health (2016), 27 per cent of pharmaceutical companies in the country are in the East (Shandong, Jiangsu, Anhui, Zhejiang, Fujian, and Shanghai), 18 per cent in the South (Guangdong, Guangxi, and Hainan), 9 per cent in the West (Sichuan, Chongqing, Yunnan, Guizhou, Tibet, Ningxia, Xinjiang, Qinghai, Shaanxi, and Gansu), 37 per cent in the North (Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia, Liaoning, Jilin, and Heilongjiang), and 9 per cent in the Central (Hubei, Hunan, Henan, and Jiangxi). It is also reported by the same source that 11 per cent of them are state-owned, 51 per cent are privately owned, 14 per cent are joint ventures, and 24 per cent are foreign-owned. As far as staff size is concerned, 7 per cent are smaller than 100, 28 per cent between 100 and 500, 18 per cent between 501 and 1,000, and 47 per cent over 1,000. Table 3-1 reports the relevant figures.

Table 3-1 Population Description

Geographic Location	Per cent	Type of Ownership	Per cent	Staff Size	Per cent
East	27%	State-owned	11%	<100	7%
South	18%	Private	51%	100-500	28%
West	9%	Joint venture	14%	501-1000	18%
North	37%	Foreign-owned	24%	>1000	47%
Central	9%				

3.2 Samples Description

Because it was unrealistic to include the entire population in the research considering its scope, samples were selected to represent the situation. The samples are described in Sections 3.2.1, 3.2.2, 3.2.3, and 3.2.4.

3.2.1 Sample for In-depth Interviews

A total of 101 interviewees were involved in in-depth interviews, which included 46 people (8 top managers, 18 middle managers, and 20 employees) from 11 pharmaceutical companies in 5 Chinese provinces (Zhejiang, Guangdong, Shanghai, Jiangsu, and Inner Mongolia), 30 patients with chronic diseases in three general hospitals in Hangzhou, China, 20 doctors in three hospitals (two general hospitals and one community clinic) in Hangzhou, China, 5 officials at the Zhejiang Provincial Food & Drug Administration, and 4 middle managers at two local API manufacturers. Roughly half of the interviewees were male, and the other half were female. The aforementioned interviewees represented most of the key stakeholders identified in the Literature Review only except the environment and the local community, which were usually indirectly represented by the government. As far as those 11 pharmaceutical companies were concerned, they covered almost all geographic locations, types of ownership, and staff sizes. The profile of the interviewees is in Table 3-2.

Table 3-2 Profile of In-depth Interviewees

Organisation	Ownership / Type	Type of Interview	Interviewees	No. of Interviewees
Zhejiang Haizheng Pharmaceuticals	State-run, PLC	Face-to-face	Top & Middle Managers, Employees	7
Hangzhou Sanofi-Minsheng Pharmaceuticals	Sino-French Joint Venture	Face-to-face	Top & Middle Managers, Employees	6
MSD Pharmaceuticals	Sino-US Joint Venture	Face-to-face	Top & Middle Managers, Employees	6
Zhejiang Xianju Pharmaceuticals	Private, LLC	Face-to-face	Top & Middle Managers, Employees	6
Zhejiang Dade Pharmaceuticals	Private, LLC	Face-to-face	Top & Middle Managers, Employees	3
Zhejiang Huahai Pharmaceuticals	Private, LLC	Face-to-face	Top & Middle Managers, Employees	3
Guangdong Lingnan Pharmaceuticals	Private, LLC	Face-to-face	Top & Middle Managers, Employees	3
Shanghai Pharmaceuticals Group	State-run, LLC	Face-to-face	Top & Middle Managers, Employees	4
Suzhou Pharmaceuticals Group	State-run, LLC	Face-to-face	Top & Middle Managers, Employees	3
Jiangsu Zhongbang Pharmaceutical	Private, LLC	Face-to-face	Top & Middle Managers, Employees	3
Inner Mongolian Datang Pharmaceutical Co.	State-run, LLC	Telephone	Top & Middle Managers, Employees	2
Zhejiang Provincial People's Hospital	State-run, general	Face-to-face	Patients with chronic diseases	12
Sir Run Run Shaw Hospital	Public-private partnership & general	Face-to-face	Patients with chronic diseases	12
Hangzhou First People's Hospital	State-run, general	Face-to-face	Patients with chronic diseases	6
Zhejiang Provincial People's Hospital	State-run, general	Face-to-face	Doctors	8
Sir Run Run Shaw Hospital	Public-private partnership & general	Face-to-face	Doctors	8
Gudang Community Clinic	State-run, community clinic	Face-to-face	Doctors	4
Zhejiang Provincial Food & Drug Administration	Government (FDA)	Face-to-face	FDA Officials	5
Taizhou Haichen Pharmaceuticals	Private, LLC	Face-to-face	Middle managers of API manufacturer	2
Ningbo Menowa Pharmaceuticals	Private, LLC	Telephone	Middle managers of API manufacturer	2

3.2.2 Sample for Open-ended Questionnaire

Besides in-depth interviews, copies of the open-ended questionnaire were sent to a total of 100 respondents from pharmaceutical companies, patients, doctors, FDA officials, and suppliers of APIs. These were 60 top and middle managers and employees working at different pharmaceutical companies in China (12 top managers, 24 middle managers, and 24 employees), 9 top and middle managers working at suppliers of raw materials to pharmaceutical companies (4 top managers and 5 middle managers), 8 provincial government officials in charge of food & medicine safety, 20 doctors from 4 hospitals, and 20 elderly patients with chronic diseases.

The questionnaire was anonymous, and respondents were asked to put down their opinion on the above matters. Results showed that the number of copies basically reached the 'saturation point' in that few new ideas emerged at the latter phase of analysis. The profile of the respondents is in Table 3-3.

Table 3-3 Profile of Respondents for Open-ended Questionnaire

Organisation	Ownership / Type	Respondents	No. of Respondents
Zhejiang Haizheng Pharmaceuticals	State-run, PLC	Top & Middle Managers, Employees	12
Hangzhou Sanofi-Minsheng Pharmaceuticals	Sino-French Joint Venture	Top & Middle Managers, Employees	11
MSD Pharmaceuticals	Sino-US Joint Venture	Top & Middle Managers, Employees	11
Zhejiang Xianju Pharmaceuticals	Private, LLC	Top & Middle Managers, Employees	10
Zhejiang Dade Pharmaceuticals	Private, LLC	Top & Middle Managers, Employees	8
Zhejiang Huahai Pharmaceuticals	Private, LLC	Top & Middle Managers, Employees	8
Zhejiang Provincial People's Hospital	State-run, general	Patients with chronic diseases	5
Sir Run Run Shaw Hospital	Public-private partnership & general	Patients with chronic diseases	5
Hangzhou First People's Hospital	State-run, general	Patients with chronic diseases	5
Zhejiang Provincial People's Hospital	State-run, general	Doctors	4
Sir Run Run Shaw Hospital	Public-private partnership & general	Doctors	3
Gudang Community Clinic	State-run, community clinic	Doctors	3
Zhejiang Provincial Food & Drug Administration	Government (FDA)	FDA Officials	10
Taizhou Haichen Pharmaceuticals	Private, LLC	Middle managers of API manufacturer	3
Ningbo Menowa Pharmaceuticals	Private, LLC	Middle managers of API manufacturer	2

3.2.3 Sample for Questionnaire 1 (For Pre-test)

Unlike the open-ended questionnaire which was targeted at both internal and external stakeholders, copies of Questionnaire 1 were only given to those working at pharmaceutical companies because it was virtually impossible for external stakeholders (e.g. patients, doctors, or FDA officials) to have the necessary information to comment on the internal management of pharmaceutical companies. The university where the author works at has a national Pharmaceutical Research Centre, which offers technology transfer and management training and frequently organises workshops and seminars for those involved in the pharmaceutical industry. Thanks to this platform, the author distributed a total of 110 copies of Questionnaire 1 to the top and middle managers of about 50 pharmaceutical companies from different parts of the country who came to the University to receive management training and attend workshops and seminars. The questionnaire was also anonymous, filled in face to face, and collected immediately upon completion. During this process, respondents were also asked whether the questionnaire was fully understandable.

Amongst the 110 copies of Questionnaire 1 that were distributed and retrieved, 101 were deemed valid (copies with items left blank were discarded). The response rate was 100% and the validity rate was 91.8%.

This sample taken roughly corresponded to the population in terms of geographic location, type of ownership, and staff size. In the population data, companies' history was the only organisational variable not available, but the other three all showed good match. Table 3-4 reports the profile of respondents involved in the pre-test.

Table 3-4 Profile of Pharmaceutical Companies Involved in Pre-test

Geographic Location	**Frequency**	**Per cent**	**History**	**Frequency**	**Per cent**
East	39	38.6%	<10 years	15	14.9%
South	9	8.9%	10-20 years	18	17.8%
West	12	11.9%	21-30 years	12	11.9%
North	29	28.7%	>30 years	56	55.4%
Central	12	11.9%			
Type of Ownership	**Frequency**	**Per cent**	**Staff Size**	**Frequency**	**Per cent**
State-owned	19	18.8%	<100	14	13.9%
Private	35	34.7%	100-500	20	19.8%
Joint venture	15	14.9%	501-1000	16	15.8%
Foreign-owned	32	31.7%	>1000	51	50.5%

3.2.4 Sample for Questionnaire 2 (for Formal Test)

In order to ensure the objectivity of the results, a different cohort of respondents was selected. Using the same platform, the author distributed a total of 320 copies of Questionnaire 2 to top and middle managers of about 180 Chinese pharmaceutical companies from different parts of the country who came to the University to receive management training and attend workshops and seminars. They were also asked to send another 200 copies of questionnaire to their peers in other pharmaceutical companies. Like the previous questionnaire for pre-test, this questionnaire was also anonymous, filled in face to face, and collected immediately after they were completed.

Amongst the first 320 copies of questionnaire, 298 ones were considered valid (copies with items left blank were discarded). For the second 200 copies, 96 ones were returned in two weeks, and 93 were valid. This made the total number of valid copies 391. The response rate was 80.0%, and the validity rate was 75.2%.

Again, this sample taken roughly corresponded to the population in terms of geographic location, type of ownership, and staff size. In the population data, companies' history was the only organisational variable not available, but the other three all showed good match. The profile of the pharmaceutical companies where respondents work is in Table 3-5.

Table 3-5 Profile of Pharmaceutical Companies Involved in Formal Test

Geographic Location	Frequency	Per cent	History	Frequency	Per cent
East	123	31.5%	<10 years	24	6.1%
South	66	16.9%	10-20 years	52	13.3%
West	35	9.0%	21-30 years	75	19.2%
North	136	34.8%	>30 years	240	61.4%
Central	31	7.9%			
Type of Ownership	**Frequency**	**Per cent**	**Staff Size**	**Frequency**	**Per cent**
State-owned	51	13%	<100	46	11.8%
Private	154	39.4%	100-500	94	24.0%
Joint venture	70	17.9%	501-1000	46	11.8%
Foreign-owned	116	29.7%	>1000	205	52.4%

3.3 Scale Design

3.3.1 Scale Conceptualisation

The CSR of pharmaceutical companies has become a serious topic in recent years as the public is getting increasingly aware of the possible negative consequences should

such CSR be breached. Previous research has proven that CSR is also a powerful tool to enhance the overall competitiveness as well as long-term profitability of enterprises, so good CSR can be regarded as one of the keys to market success. However, a well-designed benchmarking tool must be available to evaluate the actual CSR practices of pharmaceutical companies. Therefore it is truly meaningful to understand the contents, dimensions, and determinants of pharmaceutical companies' CSR, which form the foundation for the development of the above-mentioned benchmarking tool.

The scale to measure the CSR practices of pharmaceutical companies in China was to be developed through a standard process for scale design. The first task was to conceptualise the entire scale based on the scope of CSR of pharmaceutical companies in China. In order to achieve this, Wheeler and Sillanpää's (1997) and Zheng's (2006) typologies were chosen for stakeholders' identification and categorisation. After this step, the nature of stakeholders would become clearer, which could pave the way for determining actual contents of CSR to each stakeholder.

According to the literature review, core stakeholders of pharmaceutical companies were placed in three groups, namely Internal Parties, External Partners, and Public Entities. Because it was virtually impossible for the scale to represent every stakeholder based on either of the above-mentioned two typologies, only two or three stakeholders were chosen for each dimension. After this selection process, the corresponding responsibilities to these stakeholders were derived from the literature (Aupperle, Carroll & Hatfield, 1985; Maignan & Ferrell, 2000; Quazi & O'Brien, 2000; Zheng, 2006; Turker, 2009), in-depth interviews, and open-ended questionnaire, and then integrated into the pool of items to generate the questionnaire for pre-test. Reliability and validity of this questionnaire were to be assessed, and unsatisfactory items were to be removed before the final scale was produced.

3.3.2 Grounded Theory

The Grounded Theory (GT) method is a widely-used tool for qualitative research, aiming at constructing theories based on empirical data. As the researcher analyses data collected from various sources, elements (usually tagged with 'codes') are obtained. This procedure continues and those 'codes' are further processed into 'concepts' and 'categories', which eventually lead to construction of new theories. Unlike positivist analysis, GT begins with direct observation of original data and attempts to find concepts reflecting the truth behind observable phenomena. As far as philosophical underpinning

is concerned, GT falls into the school of post-positivism. This method was devised by Barney Glaser and Anselm Strauss in 1965 (Glaser & Strauss, 1967).

Charmaz (2014) argues that GT is especially suited for relatively new research areas, where generally agreed theories or definitions are still absent. As reviewed in Chapter 2, a universal agreement on the definition of CSR has yet to be proposed, and a scale dedicated to measuring CSR practices of Chinese pharmaceutical companies is also not available. On the other hand, as CSR can be culture-dependent and industry-specific, existing study on the CSR of pharmaceutical companies in China remains largely scant. Therefore the GT method would be utilised to determine the dimensions of Chinese pharmaceutical companies' CSR, and then a preliminary scale measuring their CSR practices would be designed.

3.3.2.1 Procedure Description

In this research, in-depth interviewees and respondents of open-ended questionnaire were required to offer statements on who pharmaceutical companies are responsible to and what they are responsible for each party. Their comments then went through a standard three-stage analysis, namely 1) text coding and theorising; 2) memoing and theorising; 3) integrating, refining, and composing theories. Items created through GT were to be added to the pool, which already contained items from existing literature.

3.3.2.2 Literature Review

Mature scales measuring the CSR practices of companies have provided much insight into and reference for the development of a benchmarking tool. Full-text databases such as Emerald, Elsevier, ScienceDirect and Springer have offered access to journal articles and book chapters containing relevant scales and benchmarking instruments. However, existing literature is highly split in terms of identification and categorisation of stakeholders as well as the contents of CSR to each of them.

3.3.2.3 In-depth Interview

In-depth interviewing is one of the most frequently used means in collecting qualitative data, and in this research it was mainly utilised to collect items to develop the new scale as it helped to further explore the dimensions and contents of CSR for pharmaceutical companies in China.

Each person was interviewed either face to face or by telephone for 30 minutes on average. The minimum was approximately 15 minutes and the maximum lasted for one

hour. The conversations were not taped because almost all interviewees declined. In the interview guide, questions were based on three topics: 1) Who are pharmaceutical companies responsible to? 2) What are pharmaceutical companies responsible for each party you mentioned? 3) Since you are also a stakeholder, what do you expect pharmaceutical companies to do for you as part of their responsibility?

Items were generated in a brainstorm-styled manner, and the answers of respondents helped to build the dimensions and contents of the CSR of pharmaceutical companies in China. Turker (2009) claims that CSR-related practices have to meet three criteria, namely 1) to be a product of organisational behaviour; 2) to positively affect stakeholders; 3) to transcend financial goals. These three criteria were applied to filter out irrelevant information in the respondents' remarks when the data were coded using the GT method.

3.3.2.4 Open-ended Questionnaire

An open-ended questionnaire usually does not have a fixed structure, and it includes questions that allow respondents to freely express their ideas. The questions are 'open-ended' in form, aiming at collecting qualitative data from those surveyed. This type of questionnaire is often used in exploratory studies when the researcher endeavours to develop better understanding of the topic itself. In this study, the reason why an open-ended questionnaire was utilised was that the dimensions and contents of Chinese pharmaceutical companies' CSR were still not clearly known, and the open-ended questionnaire itself was also a source of items constituting the scale.

A form which consisted of three open-ended questions regarding the CSR practices of Chinese pharmaceutical companies was used in the survey. Similar to the in-depth interviews, there were three questions on the open-ended questionnaire: 1) Who are pharmaceutical companies responsible to? 2) What are pharmaceutical companies responsible for each party you mentioned? 3) What do you expect pharmaceutical companies to do for you as part of their responsibility? Copies of this questionnaire were filled in face to face by respondents and retrieved immediately upon completion. The open-ended questionnaire was included in Appendix A.

The data collected using the open-ended questionnaire were 'coded' according to the procedure of GT and transformed into items. Besides, they were also used to confirm whether the original grouping of stakeholders was reasonable. A team of experts were invited to amend and reword the items both to minimise the perceptual distortions of the

author and to remove irrelevant items from the pool. In addition to in-depth interviews, the open-ended questionnaire contributed to a larger number and higher quality of items and assisted in improving their representativeness of the constructs they were allocated to measure.

3.3.2.5 Theoretical Memoing

According to Glaser (1998), theoretical memoing is the central step of the GT methodology, which theorises concepts of open codes as well as their possible coded relationships during the processing of data. The investigator then conceptualises the incidents recorded. Everything documented during this phase is considered useful data. In other words, theoretical memoing is a tool to record and refine ideas that emerge during comparison of incidents and concepts, which may eventually form a new theory. Ideas are then named, and their mutual relationships are identified.

As the purpose of the research is to determine the dimensions and determinants of the CSR of Chinese pharmaceutical companies, the corresponding sample units are managers and staff members in those companies. However, other stakeholders (e.g. patients, doctors, relevant government officials, suppliers) will also be interviewed to generate more data for theoretical memoing.

3.3.3 Questionnaire 1 (for Pre-test)

Based on the existing pool of items, Questionnaire 1 for pre-test would be generated. A five-point Likert scale was adopted, with endpoints being Strongly Disagree (1) and Strongly Agree (5). The purpose of using this questionnaire was to optimise the items and ensure the reliability and validity of the scale. Before the actual investigation, the draft questionnaire was to be reviewed by a group of scholars again to fine-tune its style and wording. Items that less than two thirds of experts label as ‘essential’ would be eliminated, as this practice may also enhance the content validity of the measurement instrument (Moore & Benbesat, 1991).

Because all informants were from China, items in English had to be translated into Chinese before copies of the questionnaire could be distributed. For the accurate conveyance of meaning, a Chinese professor on corporate management who had studied and worked in England for more than 10 years was invited to improve the translation, and it was then back-translated into English by an Australian postgraduate exchange student majoring in Chinese language and literature. The original questionnaire and the back-translated version only showed minor discrepancies, which were solved by the

Chinese professor and Australian student together with ease.

The questionnaire would then be analysed using IBM SPSS Statistics 22. Reliability (internal consistency) was to be examined according to the Corrected Item-Total Correlations (CITCs) of every item as well as Cronbach's alpha of every dimension and sub-dimension. The CITC reveals the item's internal consistency with other items, and Cronbach's alpha reflects the reliability of the scale. Items whose CITCs are below the 0.50 benchmark would be removed, and the recommended cut-off value for Cronbach's alpha is 0.70 (Hair, Black, Anderson & Tatham, 2006). However, although it is generally agreed upon that the Cronbach's alpha should exceed 0.70 (Nunnally, 1978; Turker, 2009; Smith, Karwan & Markland, 2009), Cortina (1993) argues that factors like number of items, number of dimensions, and average CITC should also be taken into account when determining the lower limit of Cronbach's alpha and suggests that values above 0.64 are all acceptable.

Unidimensionality refers to the availability of a single latent construct that is reflected by a number of items, and this construct can be explained by a single, common factor (Smith, Karwan & Markland, 2009). In order to ensure the unidimensionality of every construct, an Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA) was to be carried out to extract principal components. This would also help to further filter the items to determine the formal questionnaire (Questionnaire 2).

3.3.4 Questionnaire 2 (for Formal Test)

The formal questionnaire (Questionnaire 2) would contain fewer and further improved items, and it was to be used to conduct the Confirmatory Factor Analysis after all the steps for processing Questionnaire 1 were to be repeated. Moreover, the criteria for assessing CITCs, Cronbach's alpha, KMO values, and all other relevant indicators were identical to those employed for Questionnaire 1. By this step, the data were ready for Structural Equation Modelling (SEM).

3.4 Statistical Methods

3.4.1 Descriptive Statistics

After copies of Questionnaire 2 were to be retrieved, a descriptive statistical analysis would be performed using IBM SPSS Statistics 22. Measures of central tendency, dispersion, skewness, and kurtosis were to be calculated for each item.

According to Kline (2005), data are considered not to deviate significantly from a normal distribution if the absolute value of skewness is below 3.0 and that of kurtosis is lower than 10.0. If these two criteria were to be met, the mean scores of every item, dimension, and sub-dimension would then be calculated, compared, analysed, and discussed.

3.4.2 Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) is a statistical method adopted to find out both the underlying structure of related phenomena based on the relationships between measured variables and to reduce data to a smaller number of summary variables (Hair, Black, Anderson & Tatham, 2006). Likewise, the Principal Component Analysis (PCA) is a statistical instrument that transforms the observations of conceivably correlated variables into figures of linearly uncorrelated variables, which are named principal components (Netemeyer, Bearden & Sharma, 2003). The purpose is that a smaller number of dimensions will account for most of the variance (70 per cent or more) of the original set of items. The best solution is found when the minimum number of retained components accounts for the maximum proportion of variance in the original variable (Child, 1990).

The total proportion of retained variance is one of the criteria that can be used in deciding how many components to retain. The most popular one is probably the Kaiser criterion: retain only the components whose variances (eigenvalues) are greater than 1. The scree plot, which is a graphical method, identifies the number of components to be retained by searching for a steep descent on the magnitude of the eigenvalues.

Principal components are artificial variables designed to maximise the variance of original variables accounted for instead of interpretability. To aid with the interpretation, several methods of rotation are available. Varimax rotation helps to increase interpretability by maximising the dispersion of loadings within principal components, and items displaying low loadings (<0.5) or being cross-loaded on two or more constructs should be removed from the interpretation of each principal component (Netemeyer, Bearden & Sharma, 2003).

To determine whether the data are adequate for the application of PCA, both the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (which tests the overall significance of all correlations in a matrix) would be carried out. The recommended cut-off for the KMO statistic is 0.70 (Cerny & Kaiser, 1977). The *p*-value of Bartlett's test should be below 0.001 (Child, 1990). In terms of

sample size required for reliable principal components, a minimum ratio of five observations per item would be accepted.

3.4.3 Confirmatory Factor Analysis (CFA)

In multivariate statistics, the Confirmatory Factor Analysis (CFA) is employed to examine to what extent the measured variables correspond to the number of constructs assumed earlier by the researcher. In other words, it is used to confirm or reject the hypothesised measurement model (Tabachnick & Fidell, 2007).

In order to verify the construct validity (including both convergent validity and discriminant validity) of the measurement instrument, CFA would be performed using IBM SPSS Amos 20.0.

Convergent validity would be tested by examining the Standardised Factor Loading (SFL), Average Variance Extracted (AVE), and Composite Reliability (CR). If the results of the SFL were greater than 0.70, AVE above 0.50, and CR over 0.6, then good convergent validity would be signified (Bagozzi & Yi, 1988; Fornell & Larcker, 1981). AVE and CR could be calculated according to the following formulae.

$$\mathbf{AVE}=\frac{\sum \boldsymbol{\lambda_k}^2}{\sum \boldsymbol{\lambda_k}^2+\sum \boldsymbol{var}(\boldsymbol{\varepsilon_k})} \tag{3.1}$$

$$\mathbf{CR}=\frac{(\sum \boldsymbol{\lambda_k})^2}{(\sum \boldsymbol{\lambda_k})^2+\sum \boldsymbol{var}(\boldsymbol{\varepsilon_k})} \tag{3.2}$$

Source: Raykov, 1997

Discriminant validity would be verified by comparing the square roots of the AVE of every dimension to the absolute value of the corresponding correlation coefficients for other dimensions. Good discriminant validity would be indicated if the former was greater than the latter.

3.4.4 Structural Equation Modelling (SEM)

SEM is a frequently-used statistical tool to analyse the relationships between variables based on their covariance matrix, and it can determine whether a theoretical or conceptual model shows good fit. Compared to traditional methods of statistics, SEM can process not only the data measured but also the relationships between variables. Both the measurement indices and latent variables can be analysed simultaneously, and even the deviations of the variables can be measured. Moreover, SEM also reflects the

application of the covariance matrix and the overall fitting degree of a model (Raykov, 1997). For SEM, IBM SPSS Amos 20.0 was adopted.

As multiple alternative models representing the CSR practices could be proposed, SEM was to be adopted to test and compare their overall fit with the purpose of determining the most appropriate model. The software program of IBM SPSS Amos 20.0 was to be utilised for this goal. There are many indicators of model fit, but none is regarded as the single best one (Davčik, 2013). Indices e.g. Chi-square, df, Chi-square / df, RMR, GFI, AGFI, TLI, CFI, and RMSEA are generally considered to be reflective of the model's goodness of fit and are widely in use (Raykov & Marcoulides, 2006). Popular criteria are listed in Table 3-6. If the proposed theoretical model showed satisfactory results for most of them, the model could be deemed to have good fit.

Table 3-6 Common Fit Indices of SEM

Fit Indices	Acceptable Threshold Levels	Sources
Chi-square / df	<5.0	Wheaton, Muthen, Alwin & Summers, 1977
RMR	<0.08	Hu & Bentler, 1999
GFI	>0.90	Tabachnick & Fidell, 2007
AGFI	>0.90	Tabachnick & Fidell, 2007
TLI	1. >0.80; 2. >0.95	1. Tabachnick & Fidell, 2007 2. Hu & Bentler, 1999
CFI	>0.90	Bentler, 1990
RMSEA	good if < 0.05 reasonable if < 0.08	Browne & Cudeck, 1993

3.4.5 Crossover Study

In order to determine whether there were any statistically significant differences between groups on Organisational Moderating Variables (OMVs), a one-way analysis of variance (ANOVA) would be performed using IBM SPSS Statistics 22. The one-way ANOVA is a tool to establish whether statistically significant differences exist between the means of three or more independent population groups. If the *p*-value associated with the test is greater than 0.05, it indicates the hypothesis of no statistically significant differences between the means of population groups should not be rejected. However, if the *p*-value is less than or equal to 0.05, then it should be concluded that at least two population means are different.

One-way ANOVA assumes that the samples are drawn from normally distributed populations with equal variances. Levene's test would be used to assess homogeneity of population variances and, when the sample size of any group is not above 30, a Shapiro-

Wilk Test of Normality would also be carried out. This type of test is more appropriate for relatively small sample sizes compared to the Kolmogorov-Smirnov Test. When the null hypothesis of ANOVA is rejected, multiple comparison tests would be performed – Scheffé when population variances are equal and Games-Howell in case of different population variances.

The Kruskal-Wallis test is a non-parametric test for equality of more than two population distributions, and assumption of normality is not required. Hence this test would be performed if the ANOVA assumption of population normality was violated.

3.4.6 Cluster Analysis

A cluster analysis helps to group respondents so that informants in a certain cluster bear more similarity to each other than to those in other clusters. In this study, a cluster analysis may help find out any significant correlations between groups in terms of perceptions of the CSR practices.

Cluster analysis is the generic name for a wide variety of methods used to create a classification, i.e. empirically forming groups of similar observations or cases. It is a multivariate statistical method that starts with a sample of individuals and attempts to reorganise them into relatively homogeneous groups. After selection of the sample and the set of variables, three basic steps characterise all cluster procedures: (1) computation of (dis)similarities between individuals; (2) choice of an agglomeration procedure to create groups of similar cases; (3) selection and validation of the best solution in terms of the number of groups.

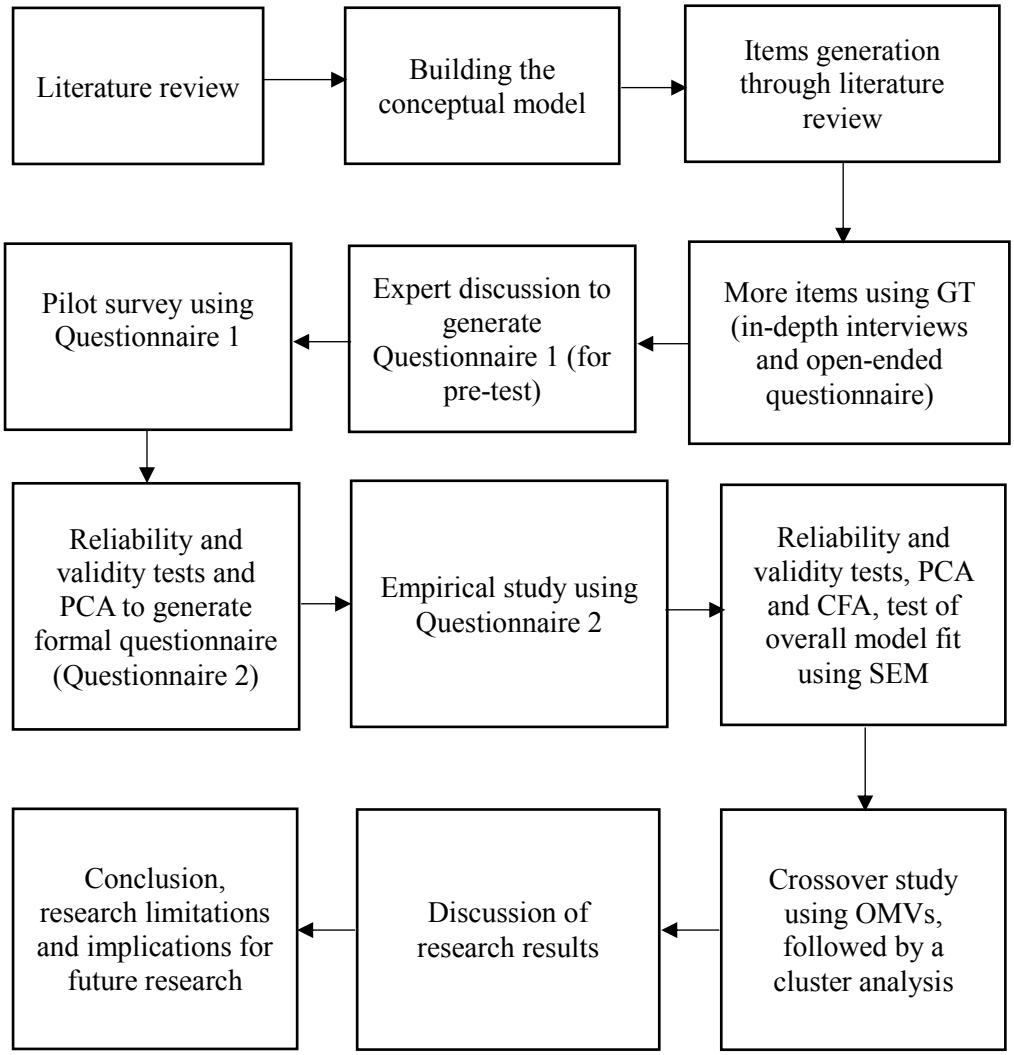
A hierarchical cluster analysis would be performed first using the principal components (each representing a sub-dimension) obtained in PCA as clustering variables and the squared Euclidean distance as the measure of dissimilarity. To validate the cluster solution, both hierarchical agglomerative (Single Linkage / Nearest Neighbour, Complete Linkage / Furthest Neighbour, and Ward's method) and non-hierarchical (K-means) methods would be run sequentially. The hierarchical solution given by the dendrogram for the number of clusters would be validated using the K-means method. Cross-tabulation of both solutions would contribute to determining the appropriate number of clusters.

After this step, the groups identified would be characterised and named with reference to information on the grouping variables and other features of the respondents. They would then be cross-tabulated with the OMVs to extract more clues for analysis.

3.5 Summary

The research begins from an extensive literature review to explore the dimensions and contents of Chinese pharmaceutical companies' CSR, and then a conceptual model is built based on the above information. Besides, literature has also provided an initial pool of items, which is then enlarged by adding more items generated through the GT method (in-depth interviews and open-ended questionnaire). A group of experts are then invited to filter and improve these items to design the questionnaire for pre-test. This is followed by a pilot survey to ensure the reliability and validity of the scale before the formal questionnaire is constructed. This formal questionnaire will be adopted for empirical study using tools including EFA (in the form of PCA), CFA, and SEM after descriptive statistics are carried out and reliability and validity are examined. A crossover study using OMVs is then performed, which is followed by a discussion of results. A cluster analysis will also be done to further explore any significant correlations between groups of respondents. Finally a conclusion is drawn to summarise the findings and to present research limitations and directions for future research. Figure 3-1 illustrates the pathway of the study.

Figure 3-1 Research Pathway



Chapter 4: Scale Development

4.1 Defining the Concept of Chinese Pharmaceutical Companies' CSR

4.1.1 Purpose of Research

The pharmaceutical sector in China is an integral part of the country's social economy, and it covers primary, secondary, and tertiary industries. Subsectors include Active Pharmaceutical Ingredients (APIs), Traditional Chinese Medicine (TCM), *Zhongyao Yinpian* (Traditional Chinese Medicines prepared in ready-to-use forms), Chinese patent drugs, antibiotics, biologicals, biochemical drugs, radiopharmaceuticals, medical equipment, hygienic materials, pharmaceutical packaging materials etc. The role that pharmaceutical companies play in public health is irreplaceable.

In the last few decades, China's pharmaceutical industry has experienced rapid expansion. From 2002 to 2012, the total output of China's pharmaceutical industry increased from 246 billion RMB (approx. 38 billion euros) to 1.8 trillion RMB (approx. 279 billion euros), which showed an average annual growth of 17.7%, and it was 4.4% higher than the national industrial average (Xing, 2014).

Alongside China's flourishing pharmaceutical industry, relevant issues have also emerged. First, many of the pharmaceutical companies in China are SMEs, which are more vulnerable to market fluctuations and lack economy of scale. Second, the enterprise-centred innovation mechanism has yet to be formed. Most produce generic drugs instead of self-patented ones, and the investment on R&D is also limited. Third, although China is already the largest manufacturer of APIs in the world, the quality of the pharmaceutical preparations produced has to be improved before they can be accepted by international markets. Fourth, quality matters frequently arise as a result of poor management of the manufacturing processes of medicine, which often lead to health crises and product recalls.

Existing research demonstrates that CSR helps to improve the quality of products as well as customer satisfaction, corporate image, brand loyalty, and some other positive attributes that may eventually contribute to a win-win situation all around. However, many pharmaceutical companies in China may not have fully realised the significance of CSR, which may partly be caused by the fact that the contents of their CSR have yet to be determined. In other words, those companies must first understand what constitutes

good CSR before actual implementation. Thus the purposes of this research must include the development of an effective and objective benchmarking tool that outlines the CSR norms that pharmaceutical companies in China are expected to abide by.

4.1.2 Stakeholder Identification and Categorisation

West (2012) identifies 6 key stakeholders (patients, government, employees, NGOs, local communities, and media) of the pharmaceutical industry without further categorisation. Li (2010) proposes 5 key stakeholders (patients, employees, environment, community, and society) with the CSR for the former three ones being compulsory and that for the latter two being less immediate. Zheng (2006) puts stakeholders of any business in three categories, namely Internal Parties (shareholders, managers, and employees), External Partners (creditors, suppliers, distributors, and consumers) and Public Entities (the government, the environment, and the local community). Chen & Jia (2004) name three categories of stakeholders, and they are core stakeholders (shareholders, managers, and employees), latent stakeholders (creditors, suppliers, distributors, and consumers) and marginal stakeholders (government, the environment, and community). These scholars' contributions show that there is still no universally agreed identification or categorisation of the stakeholders of pharmaceutical companies, let alone actual responsibilities to each stakeholder. Hence the first task of the research is to identify and categorise key stakeholders of China's pharmaceutical industry.

4.1.3 Data Analysis (Open Coding, Axial Coding & Selective Coding)

A considerable amount of original data (more than 200 A4-pages) have been collected using literature review, in-depth interviews and open-ended questionnaire, and then the standard procedure of GT (Open Coding, Axial Coding, and Selective Coding) was applied to generate theories.

4.1.3.1 Open Coding

'Open Coding' refers to the initial and line-by-line conceptualisation of data collected. Its purpose is to identify the problem and propose a possible solution by way of coding all the written data. This would often lead to many fragmented concepts and incidents, which need to be coded, compared, merged, modified and re-named. This process is then repeated many times until the primitive theory is generated (Strauss & Corbin, 1998).

According to the above standard procedure, the original written data were examined, coded, compared, and merged before the concepts and dimensions were extracted. Furthermore, scholars on CSR, law, and management were also invited to give their comments throughout the whole process. The final results comprise 61 concepts and 18 dimensions, which are shown in Table 4-1:

Table 4-1 Open Coding Analysis (OCA) of Data

Original Data	Open Coding	
	Concepts	**Dimensions**
1. I believe our enterprise has good credit. 2. I believe that an enterprise should disclose their investment situations to shareholders and offer satisfactory return on their investment; bigger shareholders should never infringe the legal rights of smaller shareholders. 3. Our enterprise regularly provides shareholders with complete and genuine information. 4. Our enterprise formulates and implements strategies on an annual basis for its long-term survival and development. 5. Our enterprise seeks to increase its profit by reducing production costs and enhancing productivity. 6. Our enterprise enjoys fame in the industry and attracts much attention from both the government and the society. 7. Our enterprise has formulated a clear and transparent salary policy for top managers. 8. Our enterprise offers top managers gifts and other benefits on festivals in addition to their regular salaries, as well as paid holidays according to their years of service. 9. Our enterprise devises personal development plans for managers and offers them stable jobs. 10. Regular training is offered to top managers to increase their human resources. 11. Our enterprise regularly organises activities to promote communication and understanding between employees, thereby promoting our corporate image. 12. Our enterprise ensures a certain percentage of women in the management team. 13. The salary of every employee is reasonable and always paid in time; benefits for festivals are also offered. 14. Our enterprises ensures that every employee receives proper	a1 Good corporate credit a2 Return on investment a3 Preventing bigger shareholders from infringing upon the rights and interests of smaller shareholders a4 Informing shareholders a5 Formulating and implementing corporate development strategy a6 Long-term survival and sustainable development a7 Reducing production costs a8 Increasing employee's productivity a9 Positive social remarks a10 Transparent salary policy a11 Benefits for managers on festivals a12 Paid holidays a13 Career development planning a14 Stable jobs for managers a15 Harmonious organisational and interpersonal relationships a16 Positive corporate image	**1 Shareholders' Rights and Interests include:** a1 Good corporate credit a2 Return on investment a3 Preventing bigger shareholders from infringing upon the rights and interests of smaller shareholders a4 Informing shareholders a9 Positive social remarks **A2 Corporate Development includes:** a5 Formulating and implementing corporate development strategy a6 Long-term survival and sustainable development a7 Reducing production costs a8 Increasing employee's productivity **A3 Reasonable Remuneration includes:** a10 Transparent salary policy a11 Benefits for managers on festivals a12 Paid holidays **A4 Career Development includes:** a13 Career development planning a14 Stable jobs for managers **A5 Organisational Support includes:** a15 Harmonious organisational and interpersonal relationships a16 Positive corporate image

Original Data	Open Coding	
	Concepts	**Dimensions**
social insurance according to law, incl. pension, unemployment and medical insurance. 15. In addition to contributing to the Public Accumulation Funds (PAF), our enterprise provides employees with temporary accommodation. 16. Our enterprise provides a secure and pleasant environment for work, and our positions are generally stable. 17. Employees of our enterprise generally have good relationship and teamwork. 18. The HR dept. of our enterprise aids every employee with career development and regularly benchmarks their performance. 19. Our enterprise never discriminates any employee and employs handicapped people. 20. The Trade Union of our enterprise has organised various activities to provide employees with entertainment in their spare time. 21. Our enterprise has a large number of suppliers. We have good and stable relations, and change of supplier is not often. 22. Our enterprise never defers payment to suppliers. 23. Our enterprise has a good name in the industry for our prompt payment. 24. Our enterprise never abuses our bargaining power, and we treat every supplier fairly. 25. We help our suppliers solve various issues using our technical strength, e.g. technical support. 26. We have advanced R&D funds to suppliers and provide financial support for their development of new materials. 27. Our suppliers have despatched personnel here to receive training and participate in our production management. 28. Our enterprise produces medicine in strict conformity with national standards and offers consumers safe and effective products.	a17 Gender diversity in managers a18 Prompt payment of salary a19 Benefits for employees on festivals a20 Social insurance a21 Temporary accommodation a22 Good workplace security a23 Good work conditions a24 Stable jobs for employees a25 Good interpersonal relationships a26 Career planning for employees a27 Benchmarking performance of employees a28 Jobs for the handicapped a29 Trade union activities a30 Stable business relations a31 Prompt payment to suppliers a32 Never abuse bargaining power a33 Equal treatment for every supplier a34 Providing suppliers with technical support a35 Financial support for suppliers a36 Supplier's participation in management a37 Offering patients safe and effective medicine a38 Continuous improvement of medicine quality	a17 Gender diversity in managers **A6 Salary Policy includes:** a18 Prompt payment of salary a19 Benefits for employees on festivals a20 Social insurance a21 Temporary accommodation **A7 Workplace Support includes:** a22 Good workplace security a23 Good work conditions a24 Stable jobs for employees a26 Career planning for employees a27 Benchmarking performance of employees a28 Jobs for the handicapped a29 Trade union activities **A8 Strategic Alliance includes:** a30 Stable business relations a32 Never abuse bargaining power a34 Providing suppliers with technical support a35 Financial support for suppliers a36 Supplier's participation in management a37 Offering patients safe and effective medicine **A9 Prompt Payment includes:** a31 Prompt payment to suppliers **A10 Product Quality includes:** a37 Offering patients safe and effective

Original Data	Open Coding	
	Concepts	**Dimensions**
29. Our R&D dept. strives to improve the effect and efficiency of products. If human test is necessary, candidates will be fully informed. 30. We insist on reasonable pricing according to the actual costs of R&D, raw materials and processing, which conforms to the rules of China's State Administration for Commodity Prices. 31. We always promote our products in an objective manner through various media and never exaggerate their perceived effects. Consumers are informed of true and complete information on the medicine and we welcome supervision from all sides. 32. We recall medicine after their expiry date and destroy them. In case of quality issue, all the products sold will be recalled immediately, and emergent support will be given to consumers. All the loss caused will be compensated. 33. We provide hospitals and doctors with true, complete and timely information on the medicine, including their trade name, generic name, chemical name, specifications, manufacturer, batch number, certification number, perceived effects, cautions, side effects, expiry date etc. 34. Our R&D dept. regularly collects the clinical trial results from doctors to further improve the quality and effect of medicine. 35. Some pharmaceutical companies may promote their sales by bribing doctors. In our enterprise, there are mechanisms in place to prevent commercial bribery. 36. Our enterprise pays tax according to laws and regulations in the country and never evades tax. 37. Our enterprise conforms to all the laws, rules and regulations of the country in our production and sale of safe and effective medicine. 38. When faced with public health crises, e.g. SARS, outbreak of Ebola virus, we offer active co-operation with the government. 39. We help the government deal with social issues incl.	a39 Informing mechanism in human trials a40 Reasonable pricing of medicine a41 Non-exaggeration of perceived effects of medicine a42 Medicine recall after expiry date a43 Recall of tainted medicine and compensation a44 Providing true and complete information on medicine a45 Collecting results of clinical trials a46 Avoiding commercial bribery a47 Tax payment according to law a48 Abiding by laws and regulations a49 High-standard production and sales a50 Co-operation with government in public health crises a51 Co-operation with government in solving social issues	medicine a38 Continuous improvement of medicine quality **A11 Customer Service includes:** a39 Informing mechanism in human trials a40 Reasonable pricing of medicine a41 Non-exaggeration of perceived effects of medicine a42 Medicine recall after expiry date a43 Recall of tainted medicine and compensation **A12 Obligation of Informing includes:** a44 Providing true and complete information on medicine a45 Collecting results of clinical trials **A13 Commercial Bribery Prevention includes:** a46 Avoiding commercial bribery **A14 Obeying Laws and Regulations includes:** a47 Tax payment according to law a48 Abiding by laws and regulations **A15 Social Obligations:** a49 High-standard production and sales a50 Co-operation with government in public health crises a51 Co-operation with government in solving

Original Data	Open Coding	
	Concepts	**Dimensions**
employment, poverty and crimes. 40. Our enterprise engages in energy-saving and environmental protection schemes; environmental friendliness is always a strict rule. 41. Sewage is produced during our manufacturing processes; we have built our own cesspits, and our discharge of sewage is in strict conformity with national standards. 42. Our enterprise regularly monitors and evaluates the environmental impact of our operations and ensures that such influence is minimised and cleared if possible. 43. Waste materials are recycled and reused, and environment-related information is actively disclosed to the society. 44. Our enterprise is famous locally, and it has created many job opportunities and improved the local economic situation. 45. We frequently donate medicine to the local community and underdeveloped areas. Special care is given to the disadvantaged when formulating and implementing our ethical codes of conduct.	a52 Energy saving and environmental protection a53 Pollutant discharge according to national standards a54 Monitoring and evaluating the environmental impact of production a55 Restoring the environment after pollution a56 Recycling and reusing waste materials a57 Actively disclosing environment-related information a58 Creating job opportunities for local community a59 Improving local economy and development a60 Medicine donation a61 Formulating and implementing ethical codes of conduct	social issues **A16 Environmental Protection includes:** a52 Energy saving and environmental protection a53 Pollutant discharge according to national standards a54 Monitoring and evaluating the environmental impact of production a55 Restoring the environment after pollution a56 Recycling and reusing waste materials a57 Actively disclosing environment-related information **A17 Creation of Jobs includes:** a58 Creating job opportunities for local community a59 Improving local economy and development **A18 Philanthropic Activities includes:** a60 Medicine donation a61 Formulating and implementing ethical codes of conduct

4.1.3.2 Axial Coding

The Axial Coding is the coding paradigm that follows the procedure of Causative Conditions -> Phenomena -> Situations -> Mediating Conditions -> Behavioural / Interactive Strategies -> Results, and it connects the concepts generated in the Open Coding to formulate higher-order ones (Strauss & Corbin, 1998). In other words, the core task of Axial Coding is to further the categorisation of dimensions determined earlier. After consulting experts on CSR, law, and management, the 61 concepts and 18 dimensions obtained in the Open Coding were analysed to extract 8 second-order dimensions and 3 third-order dimensions, which are shown in Table 4-2. This categorisation also conforms to the findings in the literature review.

Table 4-2 Axial Coding Analysis (ACA) of Data

Dimensions Extracted from Open Coding	Second-order Dimensions	Third-order Dimensions
A1 Shareholders' Rights and Interests	b1 CSR for Shareholders	B1 CSR for Internal Parties
A2 Corporate Development		
A3 Reasonable Remuneration	b2 CSR for Managers	
A4 Career Development		
A5 Organisational Support		
A6 Salary Policy	b3 CSR for Employees	
A7 Workplace Support		
A8 Strategic Alliance	b4 CSR for Creditors & Suppliers	B2 CSR for External Partners
A9 Prompt Payment		
A10 Product Quality	b5 CSR for Consumers (Patients & Doctors)	
A11 Customer Service		
A12 Obligation of Informing		
A13 Commercial Bribery Prevention		
A14 Obeying Laws and Regulations	b6 CSR for the Government	B3 CSR for Public Entities
A15 Social Obligations		
A16 Environmental Protection	b7 CSR for the Environment	
A17 Creation of Jobs	b8 CSR for the Local Community	
A18 Philanthropic Activities		

Following the procedure described above, a total of 18 dimensions were extracted from the results gained in Open Coding. Their detailed definitions are as follows.

A1 Shareholders' Rights and Interests & A2 Corporate Development denote a pharmaceutical company's core responsibilities for its shareholders. The former includes good corporate credit, reasonable return on investment, preventing bigger shareholders from infringing the legal rights of smaller ones, adequately informing shareholders, and creation of positive social remarks, whilst the latter involves formulating and implementing a comprehensive corporate development strategy, long-term survival and

sustainable development, reducing production costs, and increasing employee's productivity. Besides, shareholders' rights and interests should also be safeguarded at the institutional level, such as establishment of the general shareholders' meeting, board of directors, board of supervisors, and a competent management team. Profits and dividends should also be distributed according to the *Corporate Law* and the company's *Articles of Association* in order to enhance shareholders' trust in the management of the company and subsequently the likelihood of their increased investment. In addition, accurate and complete information regarding the company's operations and finance, as well as other significant matters, must also be disclosed to shareholders in time to defend their right to know. Likewise, continuous and successful development of the company is also a prerequisite for shareholders to attain long-term gains, which is the raison d'être of investment. As a result, A1 Shareholders' Rights and Interests and A2 Corporate Development are put into a single second-order dimension (b1 CSR for shareholders).

A3 Reasonable Remuneration, A4 Career Development, & A5 Organisational Support represent the fundamental responsibilities that pharmaceutical companies ought to take for their managers. A3 mainly encompasses a transparent salary policy, benefits for managers on festivals, and paid holidays; A4 refers to professional career development planning and stable jobs for managers; A5 signifies harmonious organisational and interpersonal relationships, a positive corporate image, and diversity in the management team. On the one hand, managers perform daily management duties and are the agents of shareholders' interests, so whether their CSR needs are satisfied may also influence other stakeholders, such as shareholders and employees. On the other hand, the satisfaction of managers has multiple dimensions, amongst which are reasonable and transparent salary policies, opportunities for promotion, adequate organisational support etc. These needs being met may result in better overall performance of the company. Like A1 and A2, now A3 Reasonable Remuneration, A4 Career Development, and A5 Organisational Support are placed in the same second-order dimension (b2 CSR for managers).

A6 Salary Policy & A7 Workplace Support are the key contents of a pharmaceutical company's CSR for their employees. Under China's social and cultural context, A6 consists of prompt and full payment of salary, benefits for employees on festivals, social insurance, and temporary accommodation. A7 denotes good workplace security and conditions, stable jobs, career planning counselling, a reasonable tool for benchmarking work performance, jobs for the handicapped, staff diversity in terms of

gender, age, ethnicity, sexual orientation etc, and trade union activities. Actually many facets of CSR for managers also apply to employees, such as a reasonable salary policy and opportunities for promotion, as both are considered to be Internal Parties of the organisation. However, compared with managers, workplace security and conditions are probably of even larger significance as employees are usually front-line workers and are more prone to work-related injuries and accidents. Employees at pharmaceutical companies should be safeguarded against any possible injury and receive sufficient security training as well as regular health examinations. Besides, opportunities for professional training should also be provided as staff members in a pharmaceutical company, which is regarded as a knowledge-intensive industry, has to be equipped with sufficient skills and / or certification in order to perform their duties. The evidence above supports the labelling of A6 Salary Policy & A7 Workplace Support as a single second-order dimension (b3 CSR for employees).

A8 Strategic Alliance & A9 Prompt Payment are central components of a pharmaceutical company's CSR for its creditors and suppliers. A8 encompasses practices such as stable business relations, never abusing bargaining power, technical support, financial aid, strategic information sharing, and offering patients safe and effective medicine by rigorously selecting suppliers. A9 means always paying suppliers and creditors promptly and in full according to the agreement. The quality of the raw materials or APIs purchased from suppliers directly influences the safety and effectiveness of final products (pharmaceutical preparations), so strict mechanisms for supplier selection and evaluation must be in place to realise this goal. Moreover, suppliers should be considered strategic partners rather than competitors, so critical information should also be shared between both parties. In addition, because the failure of any member in the whole supply chain may affect all other members, the same strict quality codes adopted within a pharmaceutical company should also be extended to all suppliers. Last but not least, every supplier deserves respect, prompt payment, and equal treatment. Hence A8 Strategic Alliance & A9 Prompt Payment are also placed in a second-order dimension (b4 CSR for creditors & suppliers).

A10 Product Quality & A11 Customer Service are probably amongst the most essential aspects of a pharmaceutical company's CSR because they represent those for patients. A10 Product Quality involves offering patients safe and effective medicines, and continuous improvement of medicine quality; A11 Customer Service denotes an informing mechanism in human trials, reasonable pricing, non-exaggeration of

perceived effects, immediate recall of tainted medicines or after their expiry date, and offer of relevant compensation in a product quality crisis. The quality of medicine is of utmost importance, especially in China where a series of notorious tainted medicine incidents in recent years have led to serious results, including deaths of patients. Medicines with poor quality are useless; they not merely waste time and money but also pose grave threats to the health and even lives of patients. Most of those accidents could have been avoided if safety rules and standards (such as GMP, ISO9001, and ISO14001) as well as CSR norms were complied with. Furthermore, patients should be fully informed of the ingredients, specifications, perceived effects, usage, precautions, possible side effects, expiry date, and other relevant information from the product literature. In addition to good quality, ensuring affordability is another important responsibility for patients, particularly in developing countries and amongst disadvantaged groups. This means a reasonable pricing policy should be enforced. Likewise, if solely profit-driven, pharmaceutical companies may be enticed to produce kinds of medicines that have relatively high profit margin and ignore those bringing less earnings even though they are in large demand. However, pharmaceutical companies should balance their product lines 'conscientiously' if CSR is taken into account.

A12 Obligation of Informing & A13 Commercial Bribery Prevention mainly deal with CSR for doctors. A12 means providing true and complete information on medicines, and collecting results of clinical trials; A13 indicates avoiding commercial bribery. Like patients, doctors should also be duly informed about the ingredients, specifications, perceived effects, usage, precautions, possible side effects, expiry date, and other relevant information of the medicine, as accurate, complete, and objective medicine information not only helps doctors make correct decisions but also increases trust between parties. On the other hand, clinical data collected by doctors usually provide invaluable clues to improving the medicine, so pharmaceutical companies ought to actively collect such information from doctors as a means of further enhancing product quality. In order to promote sales, some pharmaceutical companies pay 'kickbacks' to doctors, including both local Chinese companies and international pharmaceutical giants like GSK, Sanofi etc. Such behaviour not only seriously violates CSR but also breaks China's *Criminal Law*, which can lead to huge fines and imprisonment. Consequently, commercial bribery in marketing of medicine is strictly forbidden, and prevention of such practices constitutes a vital aspect of CSR for doctors.

In this research, the responsibilities for patients and doctors are put into a single second-order dimension: 'b5 CSR for consumers (patients & doctors)'. The reason why patients and doctors are both considered consumers is that medicine is essentially a very special type of product because of the obscurity in defining who the consumer is. For most products on the market, a consumer is the person who plays three roles simultaneously: making the purchase decision, paying for the product, and actually using it. However, for medicine (especially prescription drugs), the doctor makes the purchase decision, the patient makes payment (sometimes together with medical insurance), and the patient himself / herself finally takes the medicine. As a result, only patients and doctors together can represent all the roles of consumers.

A14 Obeying Laws and Regulations & A15 Social Obligations signify a pharmaceutical company's CSR for the government. The former covers positive practices such as tax payment according to the law and abiding by all laws and regulations; the latter encompasses high-standard production and sales as well as co-operation with the government in public health crises and in solving social issues. On the market, a pharmaceutical company is subject to both the 'visible hand' (government intervention) and the 'invisible hand' (market competition). In a highly regulated sector, a pharmaceutical company must accept the supervision and regulation of the government, which sets out relevant rules. A good relationship with the government also builds trust and increases the chance of official support in case of need. To summarise, these liabilities come under a new second-order dimension (b6 CSR for the government).

A16 Environmental Protection is a key aspect of CSR, particularly for pharmaceutical companies, which are usually major polluters. A16 involves many codes, e.g. energy saving and environmental protection, pollutant discharge according to national standards, monitoring and evaluating the environmental impact of production, restoring the environment after pollution, recycling and reusing waste materials, and actively disclosing environment-related information. During the production of medicine, a lot of contamination and toxic waste are produced, which must be dealt with in strict conformity with relevant laws and regulations. Moreover, pharmaceutical companies should adopt advanced technologies and devices to minimise pollution. The pharmaceutical sector in China displays uniqueness because Traditional Chinese Medicine sometimes uses (critically) endangered animals' parts (such as tiger's bones and rhinoceros horns) or plants (such as *dendrobium officinale Kimura et Migo* and *saussurea involucrata*). Substitutes for these ingredients should be found to protect the

environment and biodiversity. CSR for the environment is subsequently also placed in a second-order dimension (b7 CSR for the environment).

A17 Creation of Jobs & A18 Philanthropic Activities comprise pharmaceutical companies' CSR for the local community. A17 includes creating job opportunities for the local community, as well as improving regional economy and development; A18 consists of medicine donation, plus formulating and implementing ethical codes of conduct. Besides these tasks, pharmaceutical companies should actively co-operate with the local community in case of health crises (such as epidemics) or natural disasters (such as earthquakes, floods etc). Health education and advocacy for a healthy lifestyle also belong to the CSR of pharmaceutical companies for their local communities. These practices may help improve the corporate image and reduce the chance of any conflict with local residents. Therefore, A17 Creation of Jobs & A18 Philanthropic Activities form a second-order dimension (b8 CSR for the local community).

Based on the above findings and further analysis, second-order dimensions b1 CSR for shareholders, b2 CSR for managers, and b3 CSR for employees are integrated into the third-order dimension B1 CSR for Internal Parties, which refers to the CSR for parties within the organisation. Second-order dimensions b4 CSR for creditors & suppliers and b5 CSR for consumers (patients & doctors) are incorporated into the third-order dimension B2 CSR for External Partners, which represents the CSR for specific parties outside the organisation. Second-order dimensions b6 CSR for the government, b7 CSR for the environment, and b8 CSR for the local community are amalgamated into the third-order dimension B3 CSR for Public Entities, which denotes the CSR for stakeholders in the public domain.

4.1.3.3 Selective Coding

The Selective Coding is the third phase of the coding process, and it deals with the relationships between dimensions. This step is usually done after the core variable or at least the tentative core has been found. Using the third-order dimensions determined earlier, 'story lines' are drawn to find out the core and second-order dimensions to showcase all the data collected for the research. These 'story lines' are also the constructs of third-order dimensions, including both inter-dimensional relationships and relevant supporting ideas. Unless third-order dimensions are further integrated into a certain theoretical framework, a theory is technically still immature (Strauss & Corbin, 1998). In order to produce a complete theory, relevant stakeholders are interviewed and experts

are consulted again to find out the core dimension. This process is indispensable in that it leads to a core dimension covering all concepts mentioned in the research, and the interactions between the core dimension and other dimensions will gradually be made clear.

The 'story line' becomes apparent after the above processes are carried out: Many pharmaceutical companies in China are underperforming in terms of CSR, which has led to negative consequences both to the society and to themselves. Lack of transparency and benchmarking may be direct causes of the issue. In order to solve this problem, a proper benchmarking tool must be in place, which is currently still not available. A standard scale development process is then followed, including methods such as literature review, GT, in-depth interview, and open-ended questionnaire. The central task in developing the scale is to identify who the key stakeholders are and what pharmaceutical companies are responsible for each of them, which is followed by the establishment of a theoretical model representing the real-world situation. The preliminary questionnaire (benchmarking tool) will then be tested and optimised until a formal questionnaire with adequate reliability and validity are generated. Finally this questionnaire is used to determine whether the proposed theoretical model has good fit and how the current CSR practices of pharmaceutical companies are like in China.

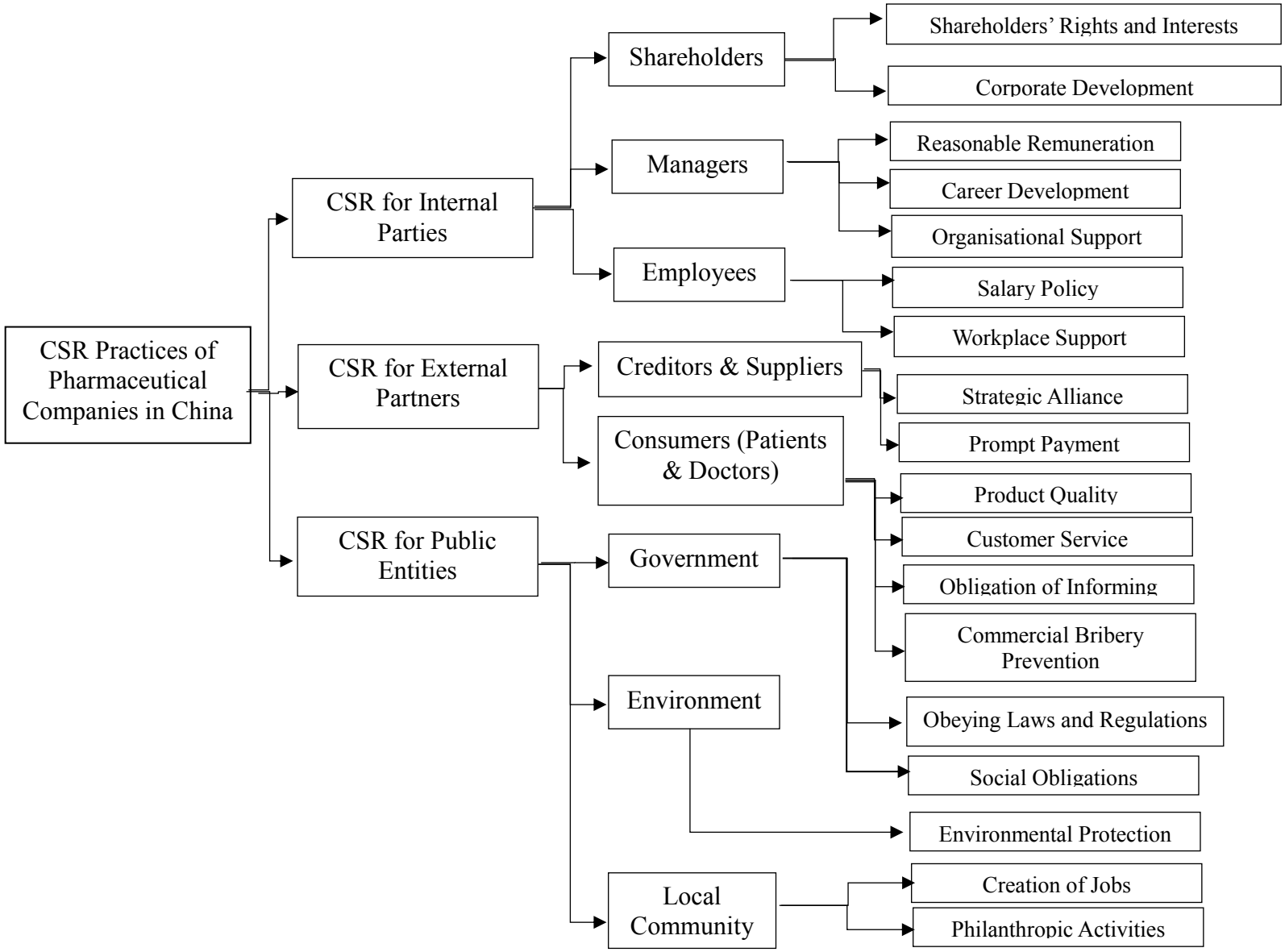
Results of the Open Coding and Axial Coding show that pharmaceutical companies in China are responsible to three groups of stakeholders: Internal Parties, External Partners, and Public Entities. Internal Parties comprise shareholders, managers, and employees; External Partners encompass creditors & suppliers, and consumers (patients & doctors); Public Entities include the government, the environment, and the local community. The actual responsibilities to each of them are elaborated in Axial Coding (Section 4.1.3.2). In addition, the above identification and categorisation of stakeholders are outcomes of Open Coding and Axial Coding.

After analysing all the relevant concepts as well as the three orders of dimensions, it is now certain that the core dimension can be named 'CSR Practices of Pharmaceutical Companies in China'. Its structure is also well-defined, which is illustrated in Figure 4-1 and serves as an updated conceptual model. The definition of 'CSR Practices of Pharmaceutical Companies in China' is thus 'what pharmaceutical companies in China are expected to do for their key stakeholders as part of their responsibilities'.

What justifies the selection of 'CSR Practices of Pharmaceutical Companies in China' as the core dimension are as follows: 1) this phrase carries the central meaning

whilst it covers all the concepts as well as second and third-order dimensions extracted in Open Coding and Axial Coding; 2) it has a broad sense and can be further extended to include more stakeholders and corresponding CSR contents, paving the way for future research; 3) this concept addresses all the questions regarding the research objectives and describes the structure of the problem-solving mechanism; 4) it is the essence on which the scale (or benchmarking tool) is based.

Figure 4-1 Selective Coding Structure of CSR Practices of Pharmaceutical Companies in China



4.1.4 Generation and Evaluation of Theory

The results of the GT analysis have drawn a clear picture of the structure of Chinese pharmaceutical companies' CSR. The core dimension being 'CSR Practices of Pharmaceutical Companies in China', three third-order dimensions come under its umbrella, namely CSR for Internal Parties, CSR for External Partners, and CSR for Public Entities. This division forms the basis of subsequent research.

4.1.4.1 Concept & Structure of Pharmaceutical Companies' CSR

Through literature review it is concluded that a unified definition of pharmaceutical companies' CSR is still not available, which may partly be caused by the complexity of the situation. Notwithstanding differences and difficulties, previous studies and data collected using the GT method have still created the possibility to re-define the CSR of pharmaceutical companies in China. In this research, the proposed definition is: Pharmaceutical companies endeavour to produce high-quality medicine for a reasonable profit, ensure transparency of product information, respect the rights of their staff, select and manage suppliers in a responsible way, abide by all laws and regulations, minimise their influence on the environment, and contribute to the prosperity of the local community, all under China's social, cultural, and market contexts.

Under 'CSR for Pharmaceutical Companies in China' there are three dimensions: CSR for Internal Parties, CSR for External Partners, and CSR for Public Entities. Their respective definitions are as follows.

CSR for Internal Parties: 'Internal Parties' comprise three stakeholders: shareholders, managers, and employees. Pharmaceutical companies should ensure reasonable return on investment for their stakeholders, prevent bigger shareholders from infringing the legal rights of smaller ones, disclose relevant information to shareholders in time, and distribute profits and dividends according to the *Corporate Law* and the company's *Articles of Association*. Besides, they should also provide their managers and employees with reasonable remunerations, opportunities for promotion and training, adequate organisational support, good workplace security and conditions, and staff diversity.

CSR for External Partners: 'External Partners' refer to two (subgroups of) stakeholders: creditors & suppliers, and consumers (patients & doctors). Pharmaceutical companies should have a clear and responsible supplier selection policy, build stable relations with creditors and suppliers, never abuse bargaining power, offer suppliers

technical support and financial aid in case of need, and share strategic information with them. In addition, suppliers and creditors should always be paid promptly and in full according to the agreement. To consumers (patients & doctors), guaranteeing the delivery of safe and effective medicines is the top priority, but it would not be possible if the relevant rules and standards such as GMP are not rigorously followed. Furthermore, pharmaceutical companies ought to adopt a reasonable pricing policy, never exaggerate the perceived effects of medicine, and recall tainted products and offer compensation immediately. Like patients, doctors should also be duly informed of true and complete information about the medicine, and giving bribery to doctors in order to win prescription is absolutely forbidden as such practices are both unlawful and unethical.

CSR for Public Entities: 'Public Entities' include three stakeholders: the government, the environment, and the local community. Pharmaceutical companies should always abide by local laws and regulations, including prompt tax payment; full co-operation with the government in public health crises is also important. For the environment, responsibilities such as energy saving and environmental protection, pollutant discharge according to national standards, monitoring and evaluating the environmental impact of production, restoring the environment after pollution, recycling and reusing waste materials, and actively disclosing environment-related information, must also be fully taken. For those producing Traditional Chinese Medicine, substitutes for ingredients that are endangered animals' parts or plants should be found to protect the environment and biodiversity. Moreover, pharmaceutical companies are also obliged to create job opportunities for the local community, as well as improving regional economy and development. They should also actively participate in various philanthropic activities, especially in case of health crises or natural disasters.

The subsequent design of the instrument measuring Chinese pharmaceutical companies' CSR practices is also based on the above three-dimensional theoretical model.

4.1.4.2 Pharmaceutical Companies' CSR in the Chinese Context

As is made clear in the literature review, CSR can be culture-dependent and phase-distinct. This means the actual contents of CSR may vary from country to country. The population of this research refers to pharmaceutical companies in China, whose culture shows conspicuous difference from Western ones and represents the situation in

developing countries to a certain extent. When producing the benchmarking tool, characteristics of China's culture and society must not be neglected.

Currently China's pharmaceutical industry is subject to heavy government intervention, as the CFDA determines which medicines are covered by state-sponsored medical insurance. As far as CSR is concerned, Article 5 of China's newly amended *Corporate Law* stipulates that all businesses in China must exercise CSR, but this Article is practically unenforceable as no definition of CSR is given in the above Law and it has not stated the consequences of failure to take CSR.

Compared to the medicines produced by pharmaceutical multinationals, Chinese-made drugs are often lower in quality, and the reasons include outdated technology, poor quality control, and an overly strong will to contain costs at the cost of effect. In recent years, medicines with poor quality produced by Chinese pharmaceutical companies have led to serious consequences, including deaths of patients, many of them children. Wealthy patients in China have turned to imported medicines because of the lack of trust in local production, and the reputation of Chinese pharmaceutical companies may need a long time to improve. Moreover, there is often exaggeration of the perceived effects of medicine in commercial advertisements, especially dietary supplements.

In some pharmaceutical companies in China, the treatment of employees has yet to improve. Problems include legally questionable labour contracts, poor work conditions, forced overtime work, unreasonable salaries, scant social insurance, inadequate job training etc. When legal rights are infringed, many employees choose to remain silent as China's current laws fail to adequately protect workers, and the consequences of proven violations are also rather lenient. The country's relatively high rate of unemployment has further reduced employees' chance of defending their rights.

As far as environmental protection is concerned, many pharmaceutical companies in China still remain big polluters, especially those manufacturing APIs. Insufficient government regulation and media report may have contributed to the current situation. On the one hand, punishment for violations of environment-related laws and regulations is still too lenient, and the costs needed to properly process pollutants may be far higher than the fine if those toxics are discharged directly. On the other hand, news media can also provide supervision if there is press freedom. However, all news media in China are under strict control of the Propaganda Department, who sometimes even actively helps polluters cover up scandals by forbidding news media from reporting the environmental

pollution in order to sustain the so-called 'social stability and harmony' (The Telegraph, 2008).

To summarise, China's culture is unique, and it is a developing country in terms of many ways, including rule of law. Loopholes in the law and poor law enforcement are often taken advantage of by some pharmaceutical companies to evade their responsibilities. In this sense, CSR and 'self-discipline' of pharmaceutical companies become even more necessary, urgent, and meaningful.

4.1.4.3 Evaluation of Research Results

The above research method has strictly followed the standard procedure of GT, including Original Data Collection, Theoretical Sampling, Open Coding, Axial Coding, Selective Coding, and Theory Generation.

Other products of GT include the re-definition of pharmaceutical companies' CSR, identification and categorisation of stakeholders, and the subsequent restructuring of actual contents of CSR to each stakeholder. The new three-dimensional model of Chinese pharmaceutical company's CSR basically represents the real-world situation, and its three dimensions are parallel. The first dimension 'CSR for Internal Parties' has three sub-dimensions: CSR for Shareholders, CSR for Managers, and CSR for Employees. The second dimension 'CSR for External Partners' has two sub-dimensions: CSR for Creditors & Suppliers and CSR for Consumers (Patients & Doctors), and the third dimension 'CSR for Public Entities' has three sub-dimensions: CSR for the Government, CSR for the Environment, and CSR for the Local Community.

In addition, the core dimension finally extracted is based on 61 concepts, eight second-order dimensions, and three third-order dimensions. The name of the core dimension is 'CSR Practices of Pharmaceutical Companies in China', and the theory is generated within its framework. The theoretical model explains to whom pharmaceutical companies are responsible and what they are responsible for, i.e. it has provided answers to two of the research questions of the study.

4.2 Verifying the Structure of Chinese Pharmaceutical Companies' CSR

4.2.1 Composition of Questionnaire for Pre-test (Questionnaire 1)

Through previous literature review and GT, a pool of items has already been generated. Sources of the items are both mature scales and results of GT. The initial scale consists of three dimensions, eight sub-dimensions, and 48 items, which are shown in Table 4-3.

Table 4-3 Initial Pool of Items

Items	Sources
1. Our company offers shareholders higher-than-average Return on Investment (ROI) compared to other pharmaceutical companies in China.	GT
2. Our company always discloses true and complete information to shareholders.	Zheng (2006)
3. Shareholders clearly know the development strategy of our company.	GT
4. Managers of our company receive highly competitive salaries.	GT
5. Managers of our company are quite optimistic about its future.	Zheng (2006)
6. Our company has created a harmonious environment for its managers.	GT
7. The management team of our company shows gender equality.	Zheng (2006)
8. Our company has signed labour contracts with all employees in conformity with law.	GT
9. Employees of our company receive salaries that are higher than the local average.	Zheng (2006)
10. Our company has completed pension as well as medical and unemployment insurance payments for all employees in conformity with law.	GT
11. Employees of our company are unlikely to suffer from occupational diseases, disability or deaths.	GT
12. Our company has internal policies preventing discrimination in employees' compensation and promotion.	Maignan & Ferrell (2000)
13. Our company supports employees who acquire additional education.	Maignan & Ferrell (2000)
14. The trade union of our company has played an important role in defending employees' rights.	Quazi & O'Brien (2000)
15. Our company has programmes that encourage the diversity of our workforce (in terms of age, gender, race, and sexual orientation).	Maignan & Ferrell (2000)
16. Our company always pays back its debts in time.	Zheng (2006)
17. Our company maintains good relationship with its creditors.	Zheng (2006)
18. Our company uses loans in conformity with the agreement.	Zheng (2006)
19. Our company has a clear policy for selecting and managing suppliers.	GT
20. Our company always pays suppliers in full and in time.	GT
21. All suppliers are treated equally during tenders.	GT
22. Our company is ISO9001-certified.	GT
23. Our company has passed GMP certification and always operates in strict conformity with it.	GT
24. Our company provides full and accurate information about its medicines for consumers, without misleading words, exaggeration of perceived effects, or concealment of side effects.	GT
25. Our company is responsive to the complaints of consumers.	Turker (2009)
26. Our company treats consumers' personal information in the strictest confidence.	GT

Items	Sources
27. Our company invests heavily on R&D to improve the quality of its medicines continuously.	GT
28. When clinical trials are being performed, patients are fully informed of all relevant details.	GT
29. Our company has a reasonable pricing policy for all medicines.	GT
30. In our company, there is a programme in place to recall tainted medicines immediately.	GT
31. Our company always provides doctors and hospitals with full and accurate information on its medicines.	GT
32. Our company strictly forbids commercial bribery and rejects illegal 'medicine representatives (*yiyao daibiao*)' during marketing.	GT
33. Our company values innovation and invests heavily on the development of new medicines.	GT
34. Our company always avoids unfair competition.	Turker (2009)
35. Our company recalls and destroys unused medicines after date of expiration.	GT
36. Our company always pays its taxes on a regular and continuing basis.	Turker (2009)
37. Our company seldom faces lawsuits.	GT
38. Our company complies with legal regulations completely and promptly.	Turker (2009)
39. Our company tries to help the government in solving social problems (such as SARS, epidemics, and HIV AIDS).	Turker (2009)
40. Our company discharges air, liquid, and solid waste in strict conformity with laws and regulations.	GT
41. Our company implements special programmes to minimise its negative impact on the natural environment.	Aupperle, Carroll & Hatfield (1985)
42. In our company, there is a programme in place to reduce the amount of energy and materials wasted in our business.	Maignan & Ferrell (2000)
43. Our company makes well-planned investments to avoid environmental degradation.	Turker (2009)
44. Our company promptly restores the environment in case of pollution.	GT
45. Our company contributes to schools, hospitals, and parks according to the needs of the society.	Turker (2009)
46. Our company endeavours to create employment opportunities for the local community.	Turker (2009)
47. Our company gives adequate contribution (such as donation of money or medicines) to charities.	Maignan & Ferrell (2000)
48. Our company considers every warning of NGOs.	Turker (2009)

After the initial pool of items became available, a manual Q-sorting technique was adopted to process the measures (Segars, Grover & Teng, 1998) and remove items with potential ambiguity. A total of 12 experts on CSR, corporate management, health care management, and law (six full professors and six associate professors) were invited to discuss, filter, and optimise the scale. This resulted in the elimination of six items as they displayed a relatively low level of agreement, i.e. below 67% according to the standards set by Moore & Benbesat (1991), and some modifications and amendments were also made to the wording and translation of the remaining ones to avert possible misunderstanding. Furthermore, items developed by Western scholars were slightly adapted to fit the Chinese culture and language. The product of this round was a 42-item

scale consisting of three dimensions and eight sub-dimensions, which formed the Questionnaire for Pre-test (Questionnaire 1, in Appendix B).

4.2.2 Pre-test and Optimisation of Items

The CITC of every item and the Cronbach's alpha of every sub-dimension were displayed in Tables 4-4, 4-5, and 4-6. Figures in bold type were those below the acceptable threshold levels (0.5 for CITC and 0.7 for Cronbach's alpha).

For CITCs, six items reported unsatisfactory results, namely P7 (0.468), P8 (0.481), P10 (0.364), P11 (0.442), P20 (0.475), and P35 (0.480). These items were then deleted from the scale.

Results also revealed that the Cronbach's alpha values of the three sub-dimensions in the first dimension (CSR for Internal Parties) were 0.891, 0.834, and 0.767; the Cronbach's alpha values of the two sub-dimensions in the second dimension (CSR for External Partners) were 0.922 and 0.930; the Cronbach's alpha values of the three sub-dimensions in the third dimension (CSR for Public Entities) were 0.877, 0.964, and 0.934. All Cronbach's alpha values were greater than the 0.70 benchmark, which denoted good internal consistency of each sub-dimension.

Table 4-4 Reliability Analysis of Variables for CSR for Internal Parties

Items	CITCs	Alpha if item deleted	Cronbach's alpha
P1	0.892	0.748	0.891
P2	0.598	0.940	
P3	0.892	0.748	
P4	0.738	0.754	0.834
P5	0.744	0.752	
P6	0.720	0.764	
P7	**0.468**	0.865	
P8	**0.481**	0.735	0.767
P9	0.619	0.705	
P10	**0.364**	0.766	
P11	**0.442**	0.750	
P12	0.662	0.688	
P13	0.505	0.743	

Table 4-5 Reliability Analysis of Variables for CSR for External Partners

Items	CITCs	Alpha if item deleted	Cronbach's alpha
P14	0.855	0.898	0.922
P15	0.777	0.908	
P16	0.756	0.914	
P17	0.755	0.911	
P18	0.806	0.905	
P19	0.742	0.913	
P20	**0.475**	0.929	0.930
P21	0.594	0.928	
P22	0.741	0.923	
P23	0.771	0.921	
P24	0.803	0.920	
P25	0.788	0.920	
P26	0.727	0.923	
P27	0.661	0.925	
P28	0.765	0.921	
P29	0.762	0.922	
P30	0.646	0.927	
P31	0.616	0.927	

Table 4-6 Reliability Analysis of Variables for CSR for Public Entities

Items	CITCs	Alpha if item deleted	Cronbach's alpha
P32	0.754	0.847	0.877
P33	0.738	0.842	
P34	0.817	0.809	
P35	**0.480**	0.870	
P36	0.908	0.953	0.964
P37	0.914	0.951	
P38	0.910	0.952	
P39	0.909	0.953	
P40	0.928	0.851	0.934
P41	0.930	0.848	
P42	0.743	0.993	

4.2.3 Principal Component Analysis (PCA)

According to Tables 4-7, 4-8, and 4-9, the eigenvalues of the three Principal Components (PCs) of CSR for Internal Parties, the two PCs of CSR for External Partners, and the three PCs of CSR for Public Entities were all above the 1.0 benchmark, their KMO values were 0.802, 0.809, and 0.765 respectively, and their Cumulative Proportions of Variance Explained were 80.067%, 65.306%, and 87.679%. Furthermore, all the three dimensions displayed satisfactory results of Bartlett's test of sphericity (p-value<0.001). These findings also supported the previous assumption about the PC structure.

Table 4-7 KMO, Bartlett's Test of Sphericity, Principal Components, Eigenvalues, and Proportions of Variance Explained of CSR for Internal Parties (Questionnaire 1)

KMO Value	Bartlett's Test of Sphericity	Principal Components	Eigenvalues	Proportions of Variance Explained	Cumulative Proportions of Variance Explained
0.802	*p*-value: .000	1	2.646	29.396	29.396
		2	2.363	26.259	55.655
		3	2.197	24.412	80.067

Table 4-8 KMO, Bartlett's Test of Sphericity, Principal Components, Eigenvalues, and Proportions of Variance Explained of CSR for External Partners (Questionnaire 1)

KMO Value	Bartlett's Test of Sphericity	Principal Components	Eigenvalues	Proportions of Variance Explained	Cumulative Proportions of Variance Explained
0.809	*p*-value: .000	1	6.241	36.709	36.709
		2	4.861	28.596	65.306

Table 4-9 KMO, Bartlett's Test of Sphericity, Principal Components, Eigenvalues, and Proportions of Variance Explained of CSR for Public Entities (Questionnaire 1)

KMO Value	Bartlett's Test of Sphericity	Principal Components	Eigenvalues	Proportions of Variance Explained	Cumulative Proportions of Variance Explained
0.765	*p*-value: .000	1	3.568	35.682	35.682
		2	2.616	26.160	61.842
		3	2.584	25.837	87.679

The actual loadings of every item were reported in Tables 4-10, 4-11, and 4-12. The CSR for Internal Parties had three sub-dimensions, namely IN1 (CSR for Shareholders), IN2 (CSR for Managers), and IN3 (CSR for Employees). Items displayed satisfactory convergence on these three PCs: P1, P2, and P3 on IN1; P4, P5, and P6 on IN2; P9, P12, and P13 on IN3.

The CSR for External Partners had two sub-dimensions, namely EX1 (CSR for Creditors & Suppliers) and EX2 (CSR for Consumers (Patients & Doctors)). Items displayed satisfactory convergence on these two PCs: P14, P15, P16, P17, P18, and P19 on EX1; P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, and P31 on EX2.

The CSR for Public Entities had three sub-dimensions, namely PU1 (CSR for the Government), PU2 (CSR for the Environment), and PU3 (CSR for the Local

Community). Items displayed satisfactory convergence on these three PCs: P32, P33, and P34 on PU1; P36, P37, P38, and P39 on PU2; P40, P41, and P42 on PU3.

Table 4-10 PCA Results of CSR for Internal Parties (Questionnaire 1)

Items	Principal Components		
	IN1	**IN2**	**IN3**
P1	0.893		
P2	0.671		
P3	0.893		
P4		0.578	
P5		0.738	
P6		0.850	
P9			0.800
P12			0.801
P13			0.572

Table 4-11 PCA Results of CSR for External Partners (Questionnaire 1)

Items	Principal Components	
	EX1	**EX2**
P14	0.871	
P15	0.811	
P16	0.832	
P17	0.687	
P18	0.823	
P19	0.658	
P21		0.567
P22		0.668
P23		0.691
P24		0.740
P25		0.784
P26		0.668
P27		0.726
P28		0.787
P29		0.744
P30		0.754
P31		0.620

Table 4-12 PCA Results of CSR for Public Entities (Questionnaire 1)

Items	Principal Components		
	PU1	**PU2**	**PU3**
P32	0.869		
P33	0.827		
P34	0.819		
P36		0.831	
P37		0.888	
P38		0.876	
P39		0.829	
P40			0.850
P41			0.853
P42			0.797

After the removal of the six unsatisfactory items in terms of CITC, a formal 36-item measurement instrument was created. Amongst these 36 items, 9 were dedicated to measuring CSR for Internal Parties, 17 were allocated to CSR for External Partners, and 10 were for CSR for Public Entities. In addition, PCA results also supported the hypothesised PC structure. This formal questionnaire (Questionnaire 2) was in Appendix C. The actual items corresponding to each dimension were reported in Tables 4-13, 4-14, and 4-15.

Table 4-13 Formal Items Measuring CSR for Internal Parties

Third-order dimension	Second-order dimensions	Items
CSR for Internal Parties IN	CSR for Shareholders IN1	in1. Our company offers shareholders higher-than-average Return on Investment (ROI) compared to other pharmaceutical companies in China. in2. Our company always discloses true and complete information to shareholders. in3. Shareholders clearly know the development strategy of our company.
	CSR for Managers IN2	in4. Managers of our company receive highly competitive salaries. in5. Managers of our company are quite optimistic about its future. in6. Our company has created a harmonious environment for its managers.
	CSR for Employees IN3	in7. Employees of our company receive salaries that are higher than the local average. in8. Our company supports employees who acquire additional education. in9. The trade union of our company has played an important role in defending employees' rights.

Table 4-14 Formal Items Measuring CSR for External Partners

Third-order dimension	Second-order dimensions	Items
CSR for External Partners	CSR for Creditors & Suppliers	ex1. Our company always pays back its debts in time.
		ex2. Our company maintains good relationship with its creditors.
		ex3. Our company uses loans in conformity with the agreement.
		ex4. Our company has a clear policy for selecting and managing suppliers.
	EX1	ex5. Our company always pays suppliers in full and in time.
		ex6. All suppliers are treated equally during tenders.
	CSR for Consumers (Patients & Doctors)	ex7. Our company has passed GMP certification and always operates in strict conformity with it.
		ex8. Our company provides full and accurate information about its medicines for consumers, without misleading words, exaggeration of perceived effects, or concealment of side effects.
		ex9. Our company is responsive to the complaints of consumers.
		ex10. Our company treats consumers' personal information in the strictest confidence.
		ex11. Our company invests heavily on R&D to improve the quality of its medicines continuously.
		ex12. When clinical trials are being performed, patients are fully informed of all relevant details.
	EX2	ex13. Our company has a reasonable pricing policy for all medicines.
		ex14. In our company, there is a programme in place to recall tainted medicines immediately.
		ex15. Our company always provides doctors and hospitals with full and accurate information on its medicines.
		ex16. Our company strictly forbids commercial bribery and rejects illegal 'medicine representatives (*yiyao daibiao*)' during marketing.
		ex17. Our company values innovation and invests heavily on the development of new medicines.

Table 4-15 Formal Items Measuring CSR for Public Entities

Third-order dimension	Second-order dimensions	Items
CSR for Public Entities PU	CSR for the Government PU1	pu1. Our company always pays its taxes on a regular and continuing basis.
		pu2. Our company seldom faces lawsuits.
		pu3. Our company complies with legal regulations completely and promptly.
	CSR for the Environment PU2	pu4. Our company discharges air, liquid, and solid waste in strict conformity with laws and regulations.
		pu5. Our company implements special programmes to minimise its negative impact on the natural environment.
		pu6. In our company, there is a programme in place to reduce the amount of energy and materials wasted in our business.
		pu7. Our company promptly restores the environment in case of pollution.
	CSR for the Local Community PU3	pu8. Our company contributes to schools, hospitals, and parks according to the needs of the society.
		pu9. Our company endeavours to create employment opportunities for the local community.
		pu10. Our company gives adequate contribution (such as donation of money or medicines) to charities.

4.3 Summary

The main product of this chapter was a three-dimensional formal questionnaire dedicated to assessing the CSR practices of pharmaceutical companies in China. Items were first collected through literature review and GT, and then a team of experts were consulted to refine the pool of items before the questionnaire for pre-test was created. A pilot study was then carried out to further improve the measurement tool, as unsatisfactory items were removed and the hypothesised PC structure was verified. This formal questionnaire could then be used to conduct the empirical study.

Chapter 5: Empirical Study

5.1 Descriptive Statistics

5.1.1 Overview

The empirical study has provided direct evidence on the most recent CSR practices of pharmaceutical companies in China (Year 2015). As a 5-point Likert scale was adopted, 1 meant 'strongly disagree' and 5 meant 'strongly agree', with the mean value being 3.

Kline (2005) holds that data are considered not to deviate significantly from a normal distribution if the absolute value of skewness is below 3.0 and that of kurtosis is lower than 10.0. The skewness and kurtosis indices of all the 36 items in the scale conformed to this standard.

The results showed that pharmaceutical companies in China had the best CSR practices for Public Entities (4.26), especially for the Government (4.48). CSR practices for External Partners were almost as good (4.25), and its two sub-dimensions exhibited similar figures (4.22 and 4.27 respectively). However, CSR practices for Internal Parties were significantly worse (3.60), especially for Employees (3.40).

5.1.2 CSR Practices for Internal Parties

Of all the three dimensions, pharmaceutical companies in China displayed the most unsatisfactory CSR performance for Internal Parties (3.60), which included Shareholders (3.84), Managers (3.56), and Employees (3.40). Eight out of the nine items representing this dimension got ratings under 4.0, with the only exception being Item 2. For shareholders, respondents reported low Return on Investment (ROI), poor information disclosure, and lack of knowledge on the development strategy of the company. For managers, low salaries was pointed out as a major problem, as Item 4 got the second lowest mean mark in the entire questionnaire. Moreover, managers were not very optimistic about their companies' future or satisfied by their work environment. Employees generally received lower-than-expected salaries, inadequate training opportunities, and seriously scant support from the trade union (Item 9 regarding trade union support had the lowest mean score in the whole scale).

Admittedly, as the respondents were solely top and middle managers of pharmaceutical companies, bias might have been involved in their answers. First, it is unimaginable for a manager to complain that his / her treatment is too good, so they might have felt that more should always have been done to protect their rights. Second, some managers were shareholders simultaneously due to the popular practice of management buyout (MBO) in China; for the same reason they might expect a better deal for shareholders. Third, since most managers used to be employees before promotion, they might have recalled their 'bad old days' and given low marks instead of depicting the current circumstances.

For the above reasons, although data showed relatively poor performance on CSR for Internal Parties, the real-world situation might not be that worrying.

Tables 5-1 presents the results per dimension, sub-dimension, and item.

Table 5-1 Chinese Pharmaceutical Companies' CSR Practices for Internal Parties

Dimensions / Sub-dimensions / Items	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
IN (CSR for Internal Parties)	391	**3.60**	.742	-.240	.123	-.276	.246
IN1 (CSR for Shareholders)	391	**3.84**	.795	-.603	.123	.423	.246
1. Our company offers shareholders higher-than-average Return on Investment (ROI) compared to other pharmaceutical companies in China.	391	**3.70**	.947	-.360	.123	-.121	.246
2. Our company always discloses true and complete information to shareholders.	391	**4.03**	.963	-.754	.123	-.092	.246
3. Shareholders clearly know the development strategy of our company.	391	**3.77**	.884	-.367	.123	-.227	.246
IN2 (CSR for Managers)	391	**3.56**	.815	-.454	.123	.185	.246
4. Managers of our company receive highly competitive salaries.	391	**3.30**	.993	-.397	.123	-.148	.246
5. Managers of our company are quite optimistic about its future.	391	**3.77**	.908	-.493	.123	-.011	.246
6. Our company has created a harmonious environment for its managers.	391	**3.62**	.958	-.421	.123	-.260	.246
IN3 CSR for Employees	391	**3.40**	.939	-.171	.123	-.510	.246
7. Employees of our company receive salaries that are higher than the local average.	391	**3.59**	1.031	-.337	.123	-.445	.246
8. Our company supports employees who acquire additional education.	391	**3.55**	1.135	-.383	.123	-.624	.246
9. The trade union of our company has played an important role in defending employees' rights.	391	**3.06**	1.244	-.096	.123	-.926	.246

5.1.3 CSR Practices for External Partners

As far as CSR for External Partners is concerned, both sub-dimensions 'CSR for Creditors & Suppliers' and 'CSR for Consumers (Patients & Doctors)' got relatively positive feedbacks (4.22 and 4.27 respectively). Those surveyed described prompt debt repayment, good relationships with creditors, loan use for agreed purposes, a clear policy for selecting, managing, and equal treatment of suppliers, compliance with GMP, conveyance of accurate product-related information to consumers, good responsiveness to complaints, guaranteeing confidentiality of consumers' personal information, sufficient R&D investment, an ethical informing mechanism in clinical trials, a reasonable pricing policy, and an emergency recall plan for tainted medicines. However, what seemed surprising was that Item 25 (commercial bribery prevention) got a mean mark of 3.96 and was the only one below 4.0 throughout the dimension. This directly indicated the seriousness of corruption in China's health care sector.

Contrary to the case for CSR for Internal Parties, CSR practices for External Partners might not be as good as what was reported because of the social desirability bias. There is usually a tendency in self-reports that respondents over-report positive behaviours whilst under-report negative ones (McBurney, 1994). Although anonymity and confidentiality were guaranteed for the investigation in an attempt to minimise this bias, the extent to which the responses represented truths or even managers' perceptions was still difficult to evaluate.

Table 5-2 presents the results per dimension, sub-dimension, and item.

Table 5-2 Chinese Pharmaceutical Companies' CSR Practices for External Partners

Dimensions / Sub-dimensions / Items	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
EX CSR for External Partners	391	**4.25**	.655	-.940	.123	.615	.246
EX1 CSR for Creditors & Suppliers	391	**4.22**	.725	-.770	.123	-.217	.246
10. Our company always pays back its debts in time.	391	**4.35**	.852	-1.120	.123	.541	.246
11. Our company maintains good relationship with its creditors.	391	**4.20**	.862	-.818	.123	.163	.246
12. Our company uses loans in conformity with the agreement.	391	**4.11**	.930	-.880	.123	.518	.246
13. Our company has a clear policy for selecting and managing suppliers.	391	**4.26**	.830	-.833	.123	-.035	.246
14. Our company always pays suppliers in full and in time.	391	**4.34**	.850	-1.273	.123	1.458	.246
15. All suppliers are treated equally during tenders.	391	**4.07**	.931	-.852	.123	.423	.246
EX2 CSR for Consumers (Patients & Doctors)	391	**4.27**	.684	-.993	.123	.911	.246
16. Our company has passed GMP certification and always operates in strict conformity with it.	391	**4.46**	.882	-1.838	.123	3.423	.246
17. Our company provides full and accurate information about its medicines for consumers, without misleading words, exaggeration of perceived effects, or concealment of side effects.	391	**4.48**	.757	-1.449	.123	1.985	.246

Dimensions / Sub-dimensions / Items	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
18. Our company is responsive to the complaints of consumers.	391	**4.32**	.854	-1.179	.123	1.171	.246
19. Our company treats consumers' personal information in the strictest confidence.	391	**4.39**	.825	-1.359	.123	1.817	.246
20. Our company invests heavily on R&D to improve the quality of its medicines continuously.	391	**4.14**	1.009	-1.007	.123	.309	.246
21. When clinical trials are being performed, patients are fully informed of all relevant details.	391	**4.32**	.884	-1.164	.123	.864	.246
22. Our company has a reasonable pricing policy for all medicines.	391	**4.15**	.841	-.811	.123	.469	.246
23. In our company, there is a programme in place to recall tainted medicines immediately.	391	**4.31**	.882	-1.182	.123	.903	.246
24. Our company always provides doctors and hospitals with full and accurate information on its medicines.	391	**4.38**	.813	-1.307	.123	1.653	.246
25. Our company strictly forbids commercial bribery and rejects illegal 'medicine representatives (*yiyao daibiao*)' during marketing.	391	**3.96**	1.118	-.969	.123	.298	.246
26. Our company values innovation and invests heavily on the development of new medicines.	391	**4.06**	1.050	-.987	.123	.397	.246

5.1.4 CSR Practices for Public Entities

In the survey, CSR practices for Public Entities exhibited the highest score amongst the three dimensions (4.26), with CSR for the Government displaying the best performance (4.48), followed by CSR for the Environment (4.23) and CSR for the Local Community (4.07) in a descending order. Informants admitted prompt tax payment, infrequent lawsuits, strict compliance with laws and regulations, environmental friendliness, creation of employment opportunities, and active participation in philanthropic events. Nevertheless, areas like energy conservation and contribution to public facilities still needed improvement.

Similar to the situation for CSR for External Partners, social desirability bias cannot be completely avoided, which means the facts could be less excellent in this dimension.

Table 5-3 presents the results per dimension, sub-dimension, and item.

Table 5-3 Chinese Pharmaceutical Companies' CSR Practices for Public Entities

Dimensions / Sub-dimensions / Items	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PU CSR for Public Entities	391	**4.26**	.679	-.838	.123	.018	.246
PU1 CSR for the Government	391	**4.48**	.660	-1.423	.123	1.741	.246
27. Our company always pays its taxes on a regular and continuing basis.	391	**4.66**	.679	-2.225	.123	5.401	.246
28. Our company seldom faces lawsuits.	391	**4.32**	.805	-.993	.123	.441	.246
29. Our company complies with legal regulations completely and promptly.	391	**4.47**	.770	-1.391	.123	1.506	.246
PU2 CSR for the Environment	391	**4.23**	.757	-.789	.123	-.149	.246
30. Our company discharges air, liquid, and solid waste in strict conformity with laws and regulations.	391	**4.40**	.810	-1.154	.123	.525	.246
31. Our company implements special programmes to minimise its negative impact on the natural environment.	391	**4.36**	.823	-1.115	.123	.553	.246
32. In our company, there is a programme in place to reduce the amount of energy and materials wasted in our business.	391	**3.96**	.880	-.278	.123	-.844	.246
33. Our company promptly restores the environment in case of pollution.	391	**4.21**	.857	-.707	.123	-.416	.246
PU3 CSR for the Local Community	391	**4.07**	.870	-.797	.123	.221	.246
34. Our company contributes to schools, hospitals, and parks according to the needs of the society.	391	**3.95**	1.037	-.782	.123	.016	.246
35. Our company endeavours to create employment opportunities for the local community.	391	**4.02**	.946	-.631	.123	-.188	.246
36. Our company gives adequate contribution (such as donation of money or medicines) to charities.	391	**4.22**	.966	-1.094	.123	.505	.246

5.2 Description and Evaluation of Models

To test the hypothesised factor structures, a Confirmatory Factor Analysis (CFA) was conducted.

Before assessing the factor structure of CSR for Internal Parties, four models were proposed: (1) Single-factor Model. The 9 items (from Item 1 to Item 9 in the questionnaire) were supposed to possess only a single latent variable, which was CSR for Internal Parties. (2) Two-factor Model A. It was supposed that IN1 (CSR for Shareholders) and IN2 (CSR for Managers) formed one common latent variable, whereas IN3 (CSR for Employees) itself was a latent variable. (3) Two-factor Model B. It was supposed that IN1 (CSR for Shareholders) itself was a latent variable, whilst IN2 (CSR for Managers) and IN3 (CSR for Employees) formed one common latent variable. (4) Three-factor Model. It was supposed that IN1 (CSR for Shareholders), IN2 (CSR for Managers), and IN3 (CSR for Employees) were three separate latent variables.

The above models were tested using IBM SPSS Amos 20.0, and the results were reported in Table 5-4. The GFI, AGFI, and TLI indices of the Single-factor Model were all below 0.9, whilst the RMSEA values of the Single-factor Model, Two-factor Model A, and Two-factor Model B were all greater than 0.08, which denoted insufficient overall model fit. Only the Three-factor Model displayed good fit.

Table 5-4 Overall Fit of Proposed Models for CSR for Internal Parties

Model	χ^2	df	χ^2 / df	RMR	GFI	AGFI	TLI	CFI	RMSEA
Single-factor Model	186.328	27	6.901	0.041	0.896	0.826	0.896	0.922	0.123
Two-factor Model A	119.395	26	4.592	0.031	0.939	0.885	0.937	0.954	0.096
Two-factor Model B	108.387	26	4.169	0.031	0.937	0.891	0.944	0.960	0.090
Three-factor Model	**57.990**	**24**	**2.416**	**0.021**	**0.969**	**0.941**	**0.975**	**0.983**	**0.060**

To examine the factor structure of CSR for External Partners, two models were proposed: (1) Single-factor Model. The 17 items (from Item 10 to Item 26 in the questionnaire) were supposed to possess only a single latent variable, which was CSR

for External Partners. (2) Two-factor Model. It was supposed that EX1 (CSR for Creditors & Suppliers) and EX2 (CSR for Consumers (Patients & Doctors)) were two separate latent variables.

Again, the above models were tested using IBM SPSS Amos 20.0, and the results were shown in Table 5-5. The GFI, AGFI, TLI, and CFI indices of the Single-factor Model were all below 0.9, whereas the RMSEA value of the Single-factor Model was greater than 0.08, which signified scant overall model fit. However, the Two-factor Model indicated good fit.

Table 5-5 Overall Fit of Proposed Models for CSR for External Partners

Model	χ^2	df	χ^2 / df	RMR	GFI	AGFI	TLI	CFI	RMSEA
Single-factor Model	1142.119	119	9.598	0.088	0.658	0.561	0.737	0.770	0.148
Two-factor Model	**303.706**	**118**	**2.574**	**0.030**	**0.928**	**0.912**	**0.952**	**0.958**	**0.064**

In order to verify the factor structure of CSR for Public Entities, four models were proposed: (1) Single-factor Model. The 10 items (from Item 27 to Item 36 in the questionnaire) were supposed to possess only a single latent variable, which was CSR for Public Entities. (2) Two-factor Model A. It was supposed that PU1 (CSR for the Government) and PU2 (CSR for the Environment) formed one common latent variable, whereas PU3 (CSR for the Local Community) itself was a latent variable. (3) Two-factor Model B. It was supposed that PU1 (CSR for the Government) itself was a latent variable, whilst PU2 (CSR for the Environment) and PU3 (CSR for the Local Community) formed one common latent variable. (4) Three-factor Model. It was supposed that PU1 (CSR for the Government), PU2 (CSR for the Environment), and PU3 (CSR for the Local Community) were three separate latent variables.

Like previously done, the above models were tested using IBM SPSS Amos 20.0, and the results were presented in Table 5-6. The GFI, AGFI, TLI, and CFI indices of the Single-factor Model, Two-factor Model A, and Two-factor Model B were all below 0.9, and the RMSEA values of these three models were all greater than 0.08, which revealed unsatisfactory overall model fit. Only the Three-factor Model had good fit.

Table 5-6 Overall Fit of Proposed Models for CSR for Public Entities

Model	χ^2	df	χ^2 / df	RMR	GFI	AGFI	TLI	CFI	RMSEA
Single-factor Model	563.237	35	16.092	0.073	0.745	0.599	0.610	0.696	0.197
Two-factor Model A	402.384	34	11.835	0.066	0.802	0.680	0.720	0.788	0.167
Two-factor Model B	394.985	34	11.617	0.065	0.807	0.688	0.725	0.792	0.165
Three-factor Model	**89.468**	**32**	**2.796**	**0.024**	**0.958**	**0.929**	**0.959**	**0.971**	**0.068**

5.3 Reliability

Same as the procedure and criteria adopted for analysing Questionnaire 1, the CITC of every item and the Cronbach's alpha of every sub-dimension within CSR for Internal Parties were calculated using IBM SPSS Statistics 22. The Cronbach's alpha values of IN1 (CSR for Shareholders), IN2 (CSR for Managers), and IN3 (CSR for Employees), which were the three variables of CSR for Internal Parties, were 0.832, 0.836, and 0.840 respectively, and the Cronbach's alpha of the entire dimension was 0.918, all were greater than 0.70. These figures demonstrated that the dimension and its variables had satisfactory reliability. Table 5-7 reports the results.

Table 5-7 Reliability Analysis of Variables for CSR for Internal Parties

Principal Components	Items	CITCs	Alpha if item deleted	Cronbach's alpha of sub-dimensions	Cronbach's alpha of dimension
	in1	0.639	0.818	0.832	0.918
IN1	in2	0.733	0.725		
	in3	0.707	0.753		
	in4	0.685	0.785	0.836	
IN2	in5	0.752	0.718		
	in6	0.658	0.811		
	in7	0.676	0.805	0.840	
IN3	in8	0.745	0.737		
	in9	0.695	0.786		

The Cronbach's alpha values of EX1 (CSR for Creditors & Suppliers) and EX2 (CSR for Consumers (Patients & Doctors)), which were the two variables of CSR for External Partners, were 0.869 and 0.950 respectively, and the Cronbach's alpha of the

entire dimension was 0.925, all were greater than 0.70. These figures demonstrated that the dimension and its variables had satisfactory reliability. Table 5-8 reports the results.

Table 5-8 Reliability Analysis of Variables for CSR for External Partners

Principal Components	Items	CITCs	Alpha if item deleted	Cronbach's alpha of sub-dimensions	Cronbach's alpha of dimension
EX1	ex1	0.696	0.842	0.869	0.925
	ex2	0.667	0.848		
	ex3	0.636	0.853		
	ex4	0.649	0.851		
	ex5	0.721	0.837		
	ex6	0.640	0.852		
EX2	ex7	0.682	0.948	0.950	
	ex8	0.788	0.945		
	ex9	0.811	0.944		
	ex10	0.824	0.943		
	ex11	0.758	0.946		
	ex12	0.800	0.944		
	ex13	0.765	0.945		
	ex14	0.827	0.943		
	ex15	0.838	0.943		
	ex16	0.728	0.947		
	ex17	0.702	0.948		

The Cronbach's alpha values of PU1 (CSR for the Government), PU2 (CSR for the Environment), and PU3 (CSR for the Local Community), which were the three variables of CSR for Public Entities, were 0.865, 0.749, and 0.855 respectively, and the Cronbach's alpha of the entire dimension was 0.840, all were greater than 0.70. These figures demonstrated that the dimension and its variables had satisfactory reliability. Table 5-9 reports the results.

Table 5-9 Reliability Analysis of Variables for CSR for Public Entities

Principal Components	Items	CITCs	Alpha if item deleted	Cronbach's alpha of sub-dimensions	Cronbach's alpha of dimension
PU1	pu1	0.700	0.850	0.865	0.840
	pu2	0.751	0.804		
	pu3	0.786	0.768		
PU2	pu4	0.557	0.683	0.749	
	pu5	0.550	0.688		
	pu6	0.529	0.699		
	pu7	0.538	0.694		
PU3	pu8	0.770	0.756	0.855	
	pu9	0.685	0.836		
	pu10	0.728	0.797		

5.4 Principal Component Analysis (PCA)

According to Tables 5-10, 5-11, and 5-12, the eigenvalues of the three Principal Components (PCs) of CSR for Internal Parties, the two PCs of CSR for External Partners, and the three PCs of CSR for Public Entities were all above the 1.0 benchmark, their KMO values were 0.924, 0.944, and 0.828 respectively, and their Cumulative Proportions of Variance Explained were 75.921%, 64.890%, and 70.140%. Furthermore, all the three dimensions displayed satisfactory results of Bartlett's test of sphericity (*p*-value<0.001). These findings also supported the previous assumption about the PC structure.

Table 5-10 KMO, Bartlett's Test of Sphericity, Principal Components, Eigenvalues, and Proportions of Variance Explained of CSR for Internal Parties (Questionnaire 2)

KMO Value	Bartlett's Test of Sphericity	Principal Components	Eigenvalues	Proportions of Variance Explained	Cumulative Proportions of Variance Explained
0.924	*p*-value: .000	1	2.434	27.039	27.039
		2	2.287	25.416	52.455
		3	2.112	23.466	75.921

Table 5-11 KMO, Bartlett's Test of Sphericity, Principal Components, Eigenvalues, and Proportions of Variance Explained of CSR for External Partners (Questionnaire 2)

KMO Value	Bartlett's Test of Sphericity	Principal Components	Eigenvalues	Proportions of Variance Explained	Cumulative Proportions of Variance Explained
0.944	*p*-value: .000	1	7.294	42.904	42.904
		2	3.738	21.986	64.890

Table 5-12 KMO, Bartlett's Test of Sphericity, Principal Components, Eigenvalues, and Proportions of Variance Explained of CSR for Public Entities (Questionnaire 2)

KMO Value	Bartlett's Test of Sphericity	Principal Components	Eigenvalues	Proportions of Variance Explained	Cumulative Proportions of Variance Explained
0.828	*p*-value: .000	1	2.396	23.963	23.963
		2	2.326	23.264	47.228
		3	2.291	22.912	70.140

The actual loadings of every item were reported in Tables 5-13, 5-14, and 5-15. The CSR for Internal Parties had three sub-dimensions, namely IN1 (CSR for Shareholders), IN2 (CSR for Managers), and IN3 (CSR for Employees). Items displayed satisfactory convergence on these three PCs: P1, P2, and P3 on IN1; P4, P5, and P6 on IN2; P7, P8, and P9 on IN3.

The CSR for External Partners had two sub-dimensions, namely EX1 (CSR for Creditors & Suppliers) and EX2 (CSR for Consumers (Patients & Doctors)). Items displayed satisfactory convergence on these two PCs: P10, P11, P12, P13, P14, and P15 on EX1; P16, P17, P18, P19, P20, P21, P22, P23, P24, P25, and P26 on EX2.

The CSR for Public Entities had three sub-dimensions, namely PU1 (CSR for the Government), PU2 (CSR for the Environment), and PU3 (CSR for the Local Community). Items displayed satisfactory convergence on these three PCs: P27, P28, and P29 on PU1; P30, P31, P32, and P33 on PU2; P34, P35, and P36 on PU3.

Table 5-13 PCA Results of CSR for Internal Parties (Questionnaire 2)

Items	Principal Components		
	IN1	**IN2**	**IN3**
P1	0.774		
P2	0.798		
P3	0.733		
P4		0.608	
P5		0.718	
P6		0.815	
P7			0.700
P8			0.805
P9			0.809

Table 5-14 PCA Results of CSR for External Partners (Questionnaire 2)

Items	Principal Components	
	EX1	**EX2**
P10	0.803	
P11	0.774	
P12	0.756	
P13	0.732	
P14	0.812	
P15	0.729	
P16		0.712
P17		0.818
P18		0.836
P19		0.846
P20		0.801
P21		0.829
P22		0.804
P23		0.853
P24		0.865
P25		0.770
P26		0.742

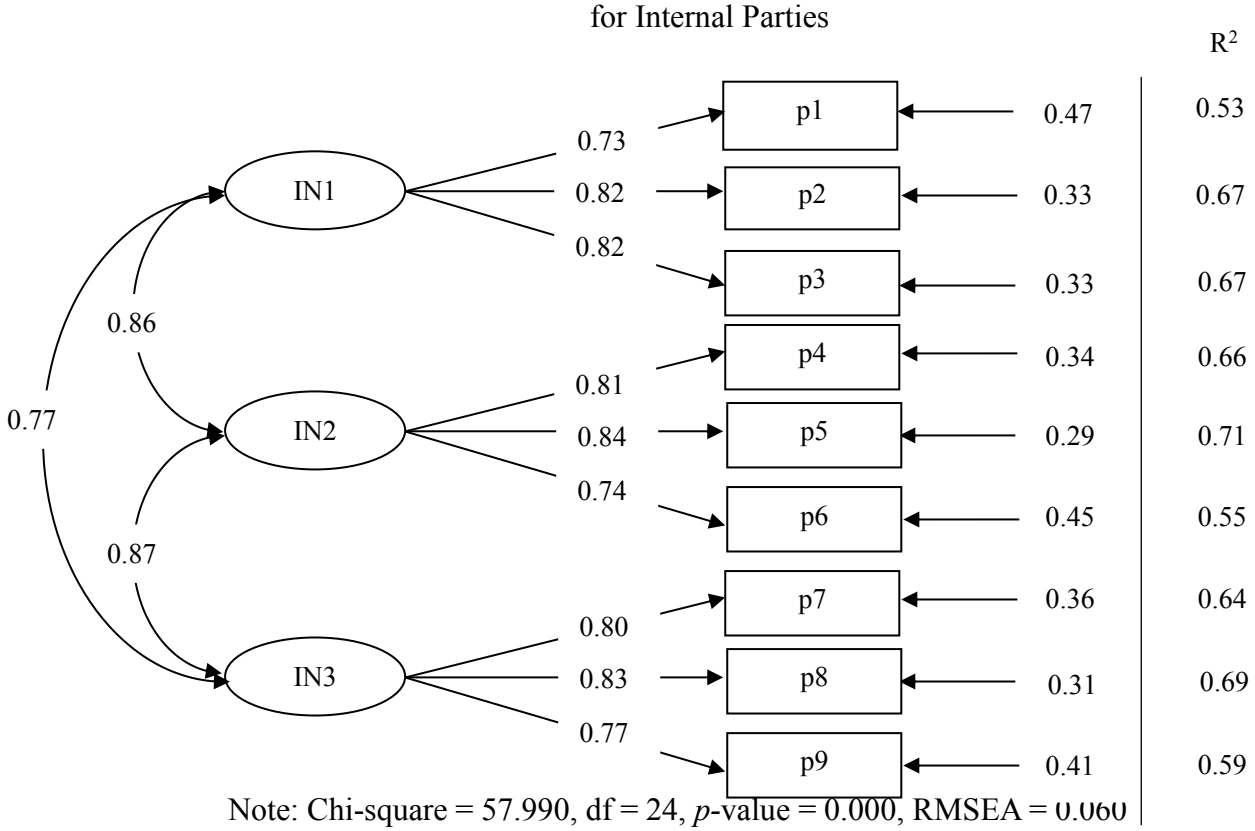
Table 5-15 PCA Results of CSR for Public Entities (Questionnaire 2)

Items	Principal Components		
	PU1	**PU2**	**PU3**
P27	0.776		
P28	0.812		
P29	0.812		
P30		0.744	
P31		0.729	
P32		0.740	
P33		0.764	
P34			0.820
P35			0.801
P36			0.804

5.5 Evaluation of Overall Model Fit

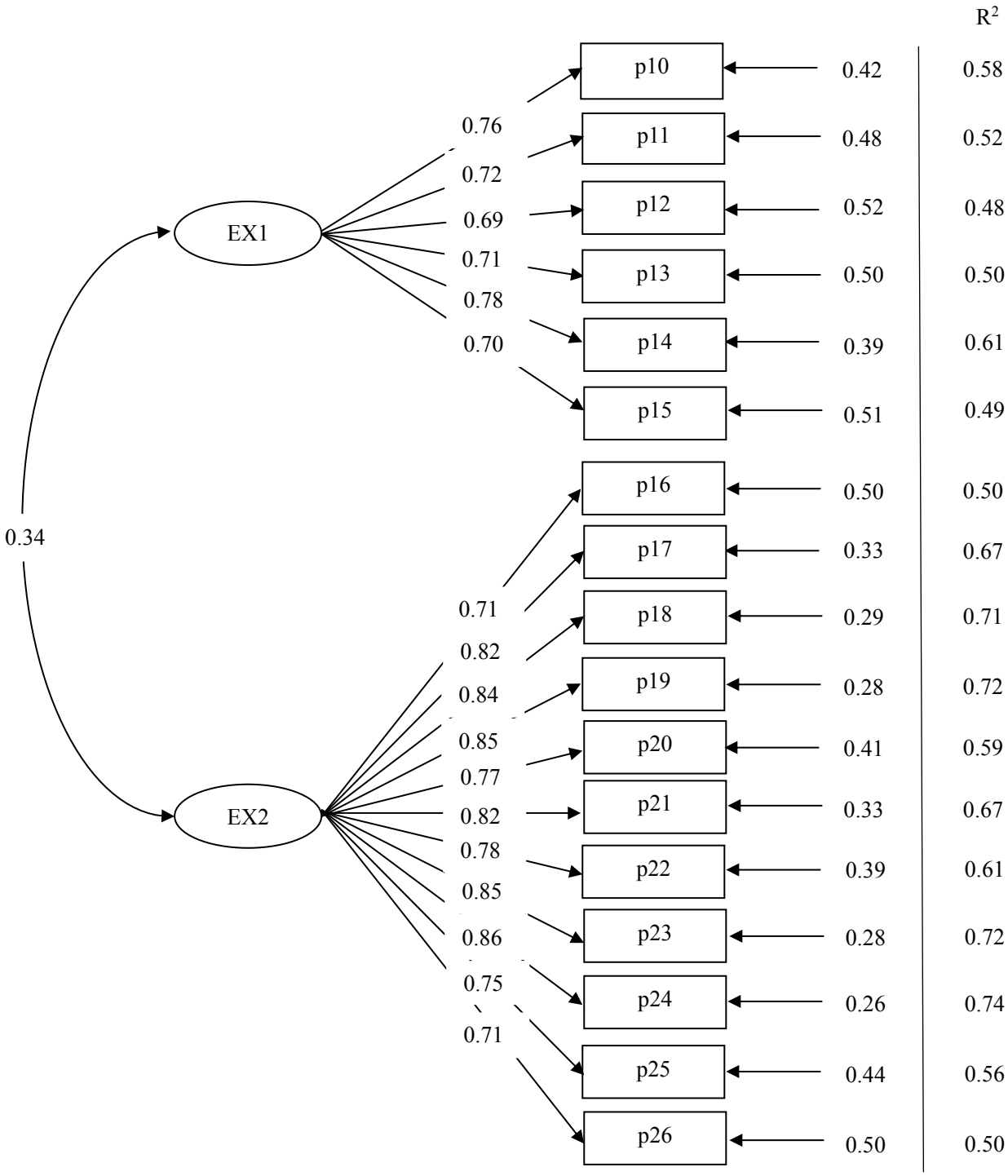
The overall model fit refers to the extent to which the indicators correspond to the hypothesised constructs (Hair, Black, Anderson & Tatham, 2006). Confirmatory Factor Analysis (CFA) was performed using the software program of IBM SPSS Amos 20.0 to compute the relevant indicators reflective of the overall fit. Besides, as the three dimensions of the model all contained sub-dimensions, the fit of each dimension measuring CSR for Internal Parties, CSR for External Partners, and CSR for Public Entities was also tested separately. Results showed good fit for all those four models. Figures 5-1, 5-2, 5-3, 5-4 and Tables 5-16 and 5-17 report the findings.

Figure 5-1 CFA Results of Chinese Pharmaceutical Companies' CSR for Internal Parties



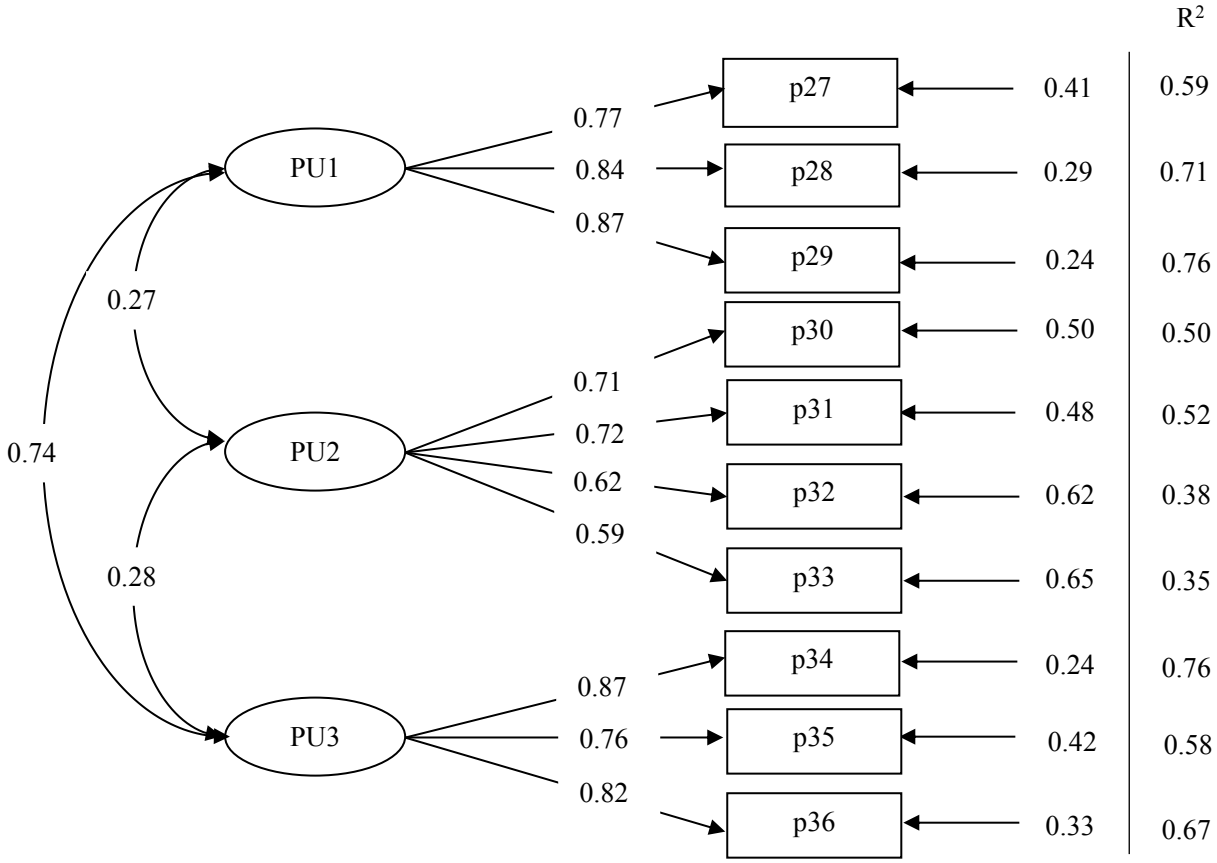
Note: Chi-square = 57.990, df = 24, *p*-value = 0.000, RMSEA = 0.060

Figure 5-2 CFA Results of Chinese Pharmaceutical Companies' CSR for External Partners



Note: Chi-square = 303.706, df = 118, *p*-value = 0.000, RMSEA = 0.064

Figure 5-3 CFA Results of Chinese Pharmaceutical Companies' CSR for Public Entities

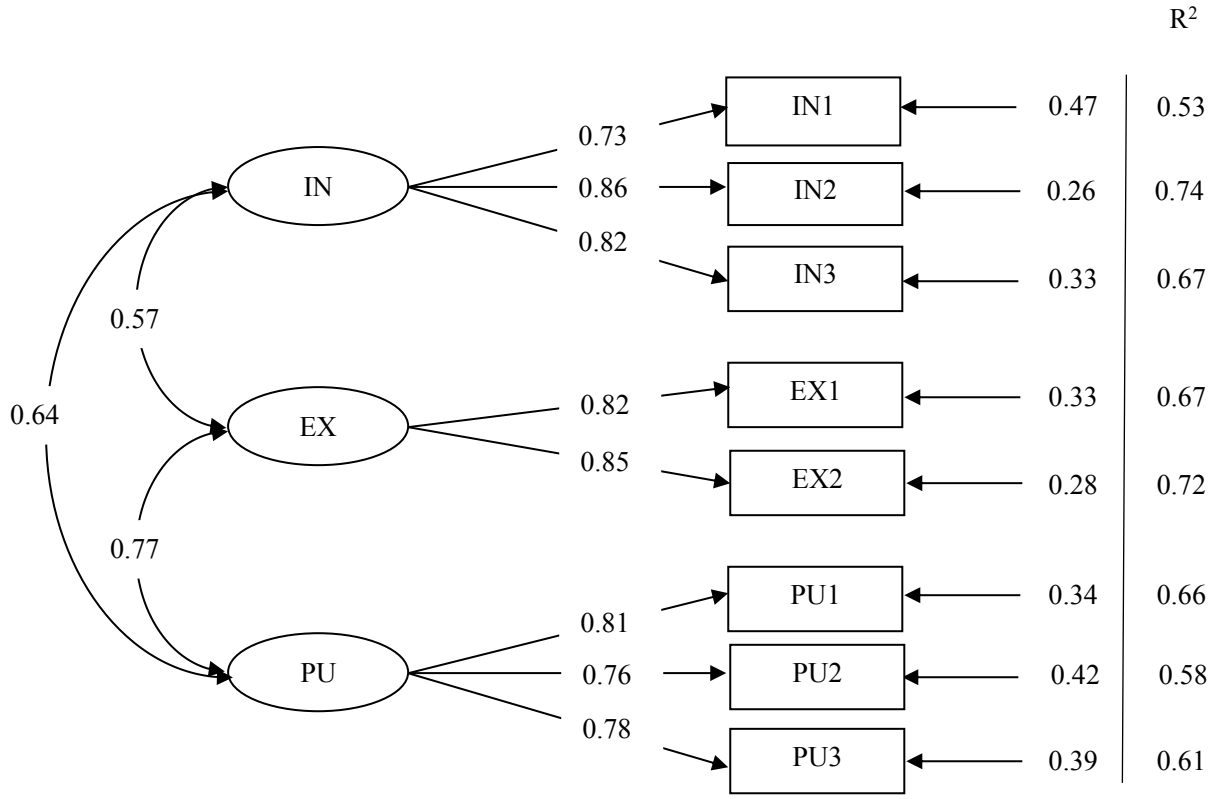


Note: Chi-square = 89.468, df = 32, *p*-value = 0.000, RMSEA = 0.068

Table 5-16 Overall Fit of Each of the Three Dimensions Constituting Chinese Pharmaceutical Companies' CSR

Dimensions	χ^2	df	χ^2 / df	RMR	GFI	AGFI	TLI	CFI	RMSEA
CSR for Internal Parties	57.990	24	2.416	0.021	0.969	0.941	0.975	0.983	0.060
CSR for External Partners	303.706	118	2.574	0.030	0.928	0.912	0.952	0.958	0.064
CSR for Public Entities	89.468	32	2.796	0.024	0.958	0.929	0.959	0.971	0.068

Figure 5-4 CFA Results of Chinese Pharmaceutical Companies' CSR



Note: Chi-square = 37.270, df = 17, *p*-value = 0.000, RMSEA = 0.055

Table 5-17 Overall Model Fit of Chinese Pharmaceutical Companies' CSR

Model	χ^2	df	χ^2 / df	RMR	GFI	AGFI	TLI	CFI	RMSEA
CSR of Chinese Pharmaceutical Companies	37.270	17	2.192	0.017	0.977	0.952	0.973	0.984	0.055

5.6 Validity

The validity of a measurement instrument denotes the degree to which it is well-organised and corresponds exactly to the real-world situation. In other words, it refers to how accurately it stands for what it aims to measure. Test Validity itself has several types, e.g. content validity, construct validity, criterion validity, face validity etc. In Sections 5.6.1 and 5.6.2, the content validity and construct validity (including convergent validity and discriminant validity) were presented.

5.6.1 Content Validity

Content validity represents the degree to which the content of the measurement tool itself matches the actual content area related to the construct, and it is non-statistical in essence (Anastasi & Urbina, 1997). In order to ascertain the content validity of the initial pool of items, a group of scholars (subject matter experts) familiar with CSR, corporate management, health care management, and law were invited to rate on how essential every item was to characterise the construct. Items that failed to win the consent of two thirds of raters were removed. After the Questionnaire for Pre-test was constructed, a preliminary investigation was performed to test its reliability and validity before the Formal Questionnaire was generated based on those results. Subsequent analyses indicated that the items in the scale sufficiently corresponded to the actual content domain to be measured, and thus the questionnaire was deemed to possess good content validity.

5.6.2 Construct Validity

Construct validity shows the extent to which a theoretical construct can be measured by an operationalisation of a construct, and it has to be proven by empirical and theoretical evidence for the explanation of the actual construct. Under Construct Validity there exist Convergent Validity and Discriminant Validity. The former means the measure is related to ideas that it should be associated with, and the latter denotes that the scale is not connected to ideas it should not be linked with (Anastasi & Urbina, 1997).

5.6.2.1 Convergent Validity

Convergent validity was determined by examining: 1) the Standardised Factor Loading (SFL); 2) the Average Variance Extracted (AVE) for each dimension; 3) the Composite Reliability (Raykov, 1997). Table 5-18 reports the relevant figures, and the scale was thus considered to possess satisfactory convergent validity.

Table 5-18 Convergent Validity of Variables in the Theoretical Model

Dimensions	PC	SFL	EV	AVE	CR
CSR for Internal Parties	IN1	0.73	0.467	0.648	0.846
	IN2	0.86	0.260		
	IN3	0.82	0.328		
CSR for External Partners	EX1	0.82	0.328	0.697	0.822
	EX2	0.85	0.278		
CSR for Public Entities	PU1	0.81	0.344	0.614	0.827
	PU2	0.76	0.422		
	PU3	0.78	0.392		

Note: PC = Principal Component; SFL = Standardised Factor Loading; EV = Error Variance;
AVE = Average Variance Extracted; CR = Composite Reliability

5.6.2.2 Discriminant Validity

According to Table 5-19, the square roots of the AVE of every dimension were greater than the absolute values of their correlation coefficients with other dimensions, which denoted satisfactory discriminant validity.

Table 5-19 Discriminant Validity of Variables in the Theoretical Model

	IN	**EX**	**PU**
IN	0.805		
EX	0.570**	0.835	
PU	0.640**	0.770**	0.784

Notes:
1: IN = CSR for Internal Parties; EX = CSR for External Partners; PU = CSR for Public Entities
2: The diagonal figures are the square roots of AVE.

5.7 Crossover Study Using Organisational Moderating Variables (OMVs)

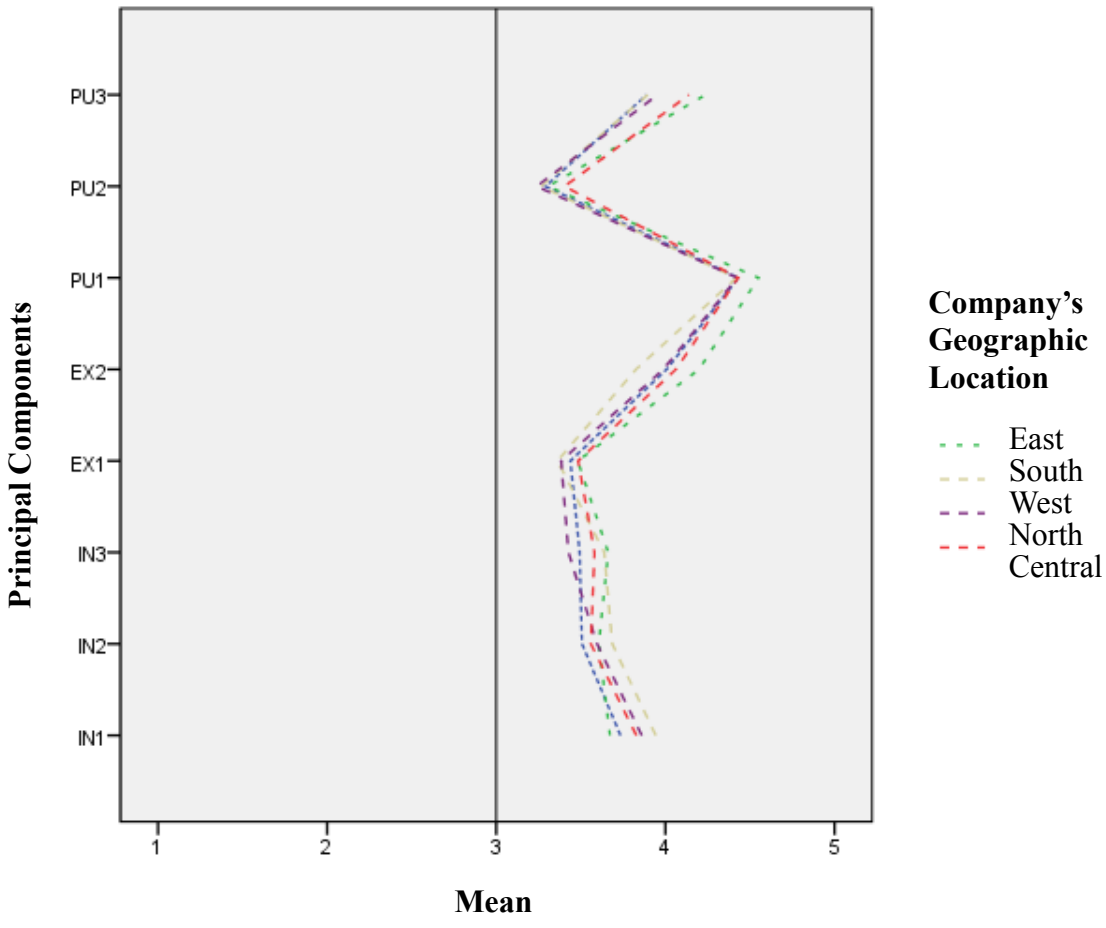
One-way ANOVA was performed in order to determine whether there were any statistically significant differences between groups on four Organisational Moderating

Variables (OMVs), namely Company's Geographic Location, Company's History, Company's Type of Ownership, and Company's Staff Size, and the results are reported in Sections 5.7.1, 5.7.2, 5.7.3, and 5.7.4.

5.7.1 The Influence of Company's Geographic Location

For the OMV of Company's Geographic Location, no statistically significant difference was found on any of the eight principal components. Their respective results are as follows: IN1: F (4,386) = 1.182, *p*-value = 0.318; IN2: F (4,386) = 0.499, *p*-value = 0.737; IN3: F (4,386) = 1.187, *p*-value = 0.316; EX1: F (4,386) = 0.496, *p*-value = 0.739; EX2: F (4,386) = 1.607, *p*-value = 0.172; PU1: F (4,386) = 0.428, *p*-value = 0.789; PU2: F (4,386) = 0.842, *p*-value = 0.499; PU3: F (4,386) = 2.379, *p*-value = 0.051. Since the smallest sample size of a group was 31, the Shapiro-Wilk Test was not performed. Figure 5-5 presents the results graphically.

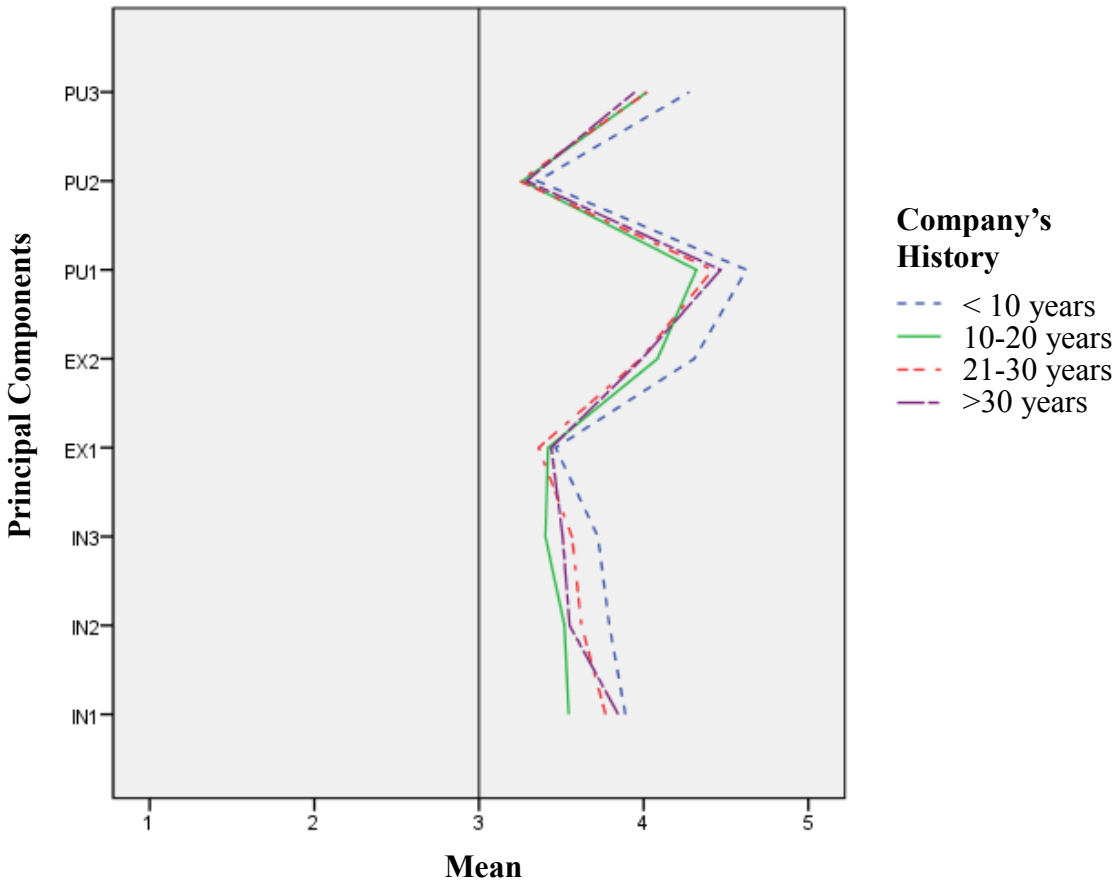
Figure 5-5 Graphical Presentation of the Influence of Company's Geographic Location



5.7.2 The Influence of Company's History

For the OMV of Company's History, no statistically significant difference was found on any of the eight principal components. Their respective results are as follows: IN1: F (3,387) = 2.321, *p*-value = 0.075; IN2: F (3,387) = 0.949, *p*-value = 0.417; IN3: F (3,387) = 0.918, *p*-value = 0.432; EX1: F (3,387) = 0.352, *p*-value = 0.788; EX2: F (3,387) = 1.473, *p*-value = 0.221; PU1: F (3,387) = 1.186, *p*-value = 0.315; PU2: F (3,387) = 0.362, *p*-value = 0.781; PU3: F (3,387) = 1.245, *p*-value = 0.293. However, as the sample size of one group was 24 (the Group '<10 years'), the Shapiro-Wilk Test was employed to test the normality of data distribution. As the *p*-values of all principal components were far higher than the 0.05 threshold with IN1 being the sole exception (*p*-value: 0.075), only this principal component underwent the Shapiro-Wilk Test. The *p*-value of this test in the Group '<10 years' was 0.064, which did not reject the hypothesis that the data had followed a normal distribution. Figure 5-6 presents the results graphically.

Figure 5-6 Graphical Presentation of the Influence of Company's History



5.7.3 The Influence of Company's Type of Ownership

For the OMV of Company's Type of Ownership, statistically significant differences were found on four out of the eight principal components. Their respective results are as follows: IN1: F (3,387) = 9.872, *p*-value = 0.000; IN2: F (3,387) = 5.461, *p*-value = 0.001; IN3: F (3,387) = 10.117, *p*-value = 0.000; EX1: F (3,387) = 1.023, *p*-value = 0.382; EX2: F (3,387) = 2.610, *p*-value = 0.051; PU1: F (3,387) = 4.211, *p*-value = 0.006; PU2: F (3,387) = 1.736, *p*-value = 0.159; PU3: F (3,387) = 2.063, *p*-value = 0.105. Since the smallest sample size of a group was 51, the Shapiro-Wilk Test was not performed.

For the four principal components whose *p*-values for ANOVA were below 0.05 (IN1, IN2, IN3, and PU1), the results of their homogeneity of variances tests were referred to. The *p*-values of them were 0.002, 0.000, 0.105, and 0.000 respectively. This meant that IN3 displayed equal variance, and a post hoc test using Scheffé would be performed. IN1, IN2, and PU1 showed non-equal variance, and Games-Howell would be chosen for the post hoc test.

For IN1, joint ventures showed significantly better performance than their privately owned counterparts (F (3,387) = 9.872, *p*-value = 0.006), and foreign-owned ones outperformed state-owned ones (F (3,387) = 9.872, *p*-value = 0.026) and did far better than privately owned ones (F (3,387) = 9.872, *p*-value = 0.000).

For IN2, joint ventures showed better performance than their privately owned counterparts (F (3,387) = 5.461, *p*-value = 0.044), and foreign-owned ones outperformed state-owned ones (F (3,387) = 5.461, *p*-value = 0.044) and did far better than privately owned ones (F (3,387) = 5.461, *p*-value = 0.002).

For IN3, joint ventures showed significantly better performance than their privately owned counterparts (F (3,387) = 10.117, *p*-value = 0.001), and foreign-owned pharmaceutical companies far outperformed privately owned ones (F (3,387) = 10.117, *p*-value = 0.000).

For PU1, foreign-owned pharmaceutical companies far outperformed privately owned ones (F (3,387) = 4.211, *p*-value = 0.003).

Figure 5-7 presents the results graphically, and Table 5-20 lists the relevant figures.

Figure 5-7 Graphical Presentation of the Influence of Company's Type of Ownership

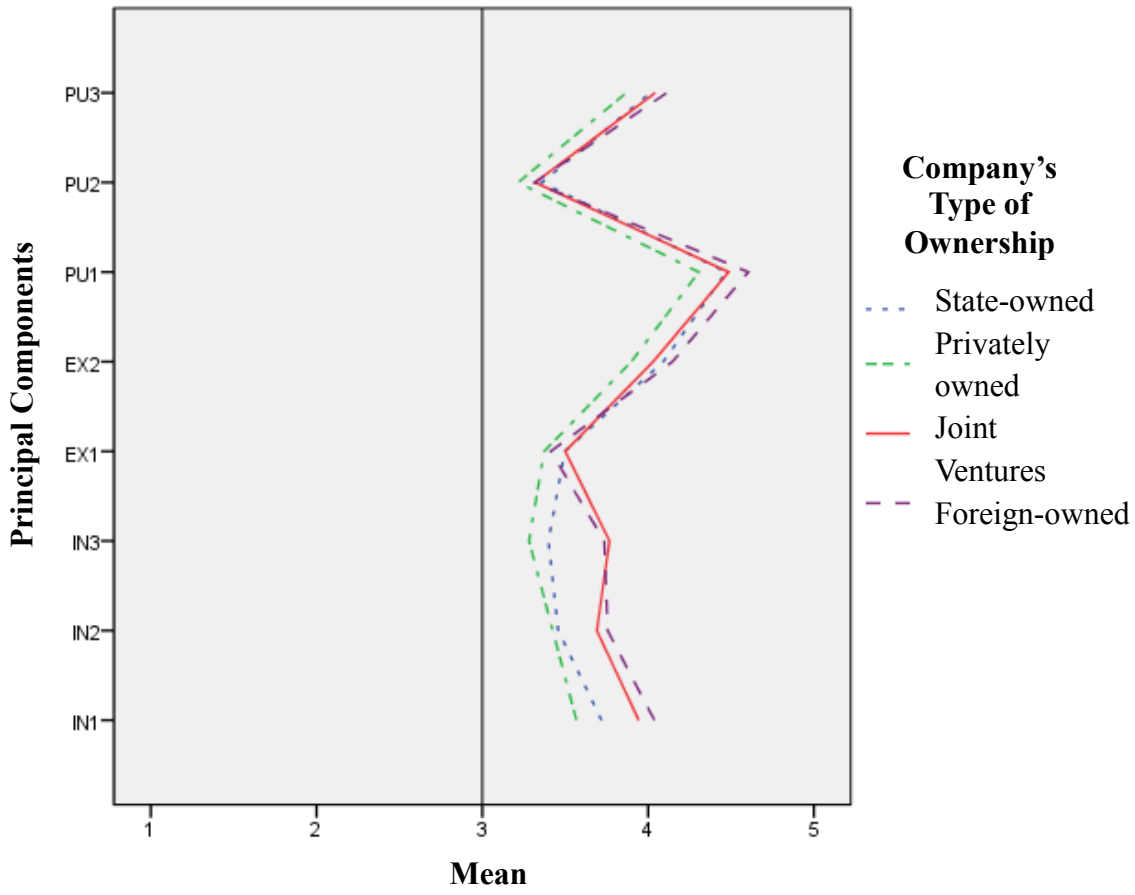


Table 5-20 Influence of Company's Type of Ownership

Principal Components	F ratios	*p*-values of ANOVA	Post Hoc Tests	Types of Post Hoc Tests
IN1	9.872	0.000*	③>② (*p*-value=0.006*) ④>① (*p*-value=0.026**) ④>② (*p*-value=0.000*)	Games-Howell
IN2	5.461	0.001*	③>② (*p*-value=0.044**) ④>① (*p*-value=0.044**) ④>② (*p*-value=0.002*)	Games-Howell
IN3	10.117	0.000*	③>② (*p*-value=0.001*) ④>① (*p*-value=0.000*)	Scheffé
PU1	4.211	0.006*	④>① (*p*-value=0.003*)	Games-Howell

* Significant at the 0.01 level; ** Significant at the 0.05 level.
Note: ①=State-owned; ②=Private; ③=Joint Venture; ④=Foreign-owned

5.7.4 The Influence of Company's Staff Size

For the OMV of Company's Staff Size, statistically significant differences were found on five out of the eight principal components. Their respective results are as follows: IN1: F (3,387) = 6.443, *p*-value = 0.000; IN2: F (3,387) = 2.965, *p*-value = 0.032; IN3: F (3,387) = 7.651, *p*-value = 0.000; EX1: F (3,387) = 1.621, *p*-value = 0.184; EX2: F (3,387) = 1.088, *p*-value = 0.354; PU1: F (3,387) = 1.957, *p*-value = 0.120; PU2: F (3,387) = 4.959, *p*-value = 0.002; PU3: F (3,387) = 10.350, *p*-value = 0.000. Since the smallest sample size of a group was 46, the Shapiro-Wilk Test was not performed.

For the five principal components whose *p*-values for ANOVA were below 0.05 (IN1, IN2, IN3, PU2, and PU3), the results of their homogeneity of variances tests were referred to. The *p*-values of them were 0.304, 0.519, 0.723, 0.079, and 0.086 respectively. This meant that all of them displayed equal variance, and a post hoc test using Scheffé would be conducted.

For IN1, pharmaceutical companies with more than 1,000 employees performed significantly better than those employing 100-500 workers (F (3,387) = 6.443, *p*-value = 0.000).

For IN2, pharmaceutical companies with more than 1,000 employees performed better than those employing 100-500 workers (F (3,387) = 2.965, *p*-value = 0.039).

For IN3, pharmaceutical companies with more than 1,000 employees performed significantly better than those employing 100-500 workers (F (3,387) = 7.651, *p*-value = 0.001).

For PU2, pharmaceutical companies with 501-1,000 employees performed better than those employing fewer than 100 workers (F (3,387) = 4.959, *p*-value = 0.012); pharmaceutical companies with more than 1,000 employees performed significantly better than those employing fewer than 100 workers (F (3,387) = 4.959, *p*-value = 0.010).

For PU3, pharmaceutical companies with 501-1,000 employees performed better than those employing fewer than 100 workers (F (3,387) = 10.350, *p*-value = 0.014); pharmaceutical companies with more than 1,000 employees performed better than those employing 100-500 workers (F (3,387) = 10.350, *p*-value = 0.039) and significantly better than those employing fewer than 100 workers (F (3,387) = 10.350, *p*-value = 0.000).

Figure 5-8 presents the results graphically, and Table 5-21 lists the relevant figures.

Figure 5-8 Graphical Presentation of the Influence of Company's Staff Size

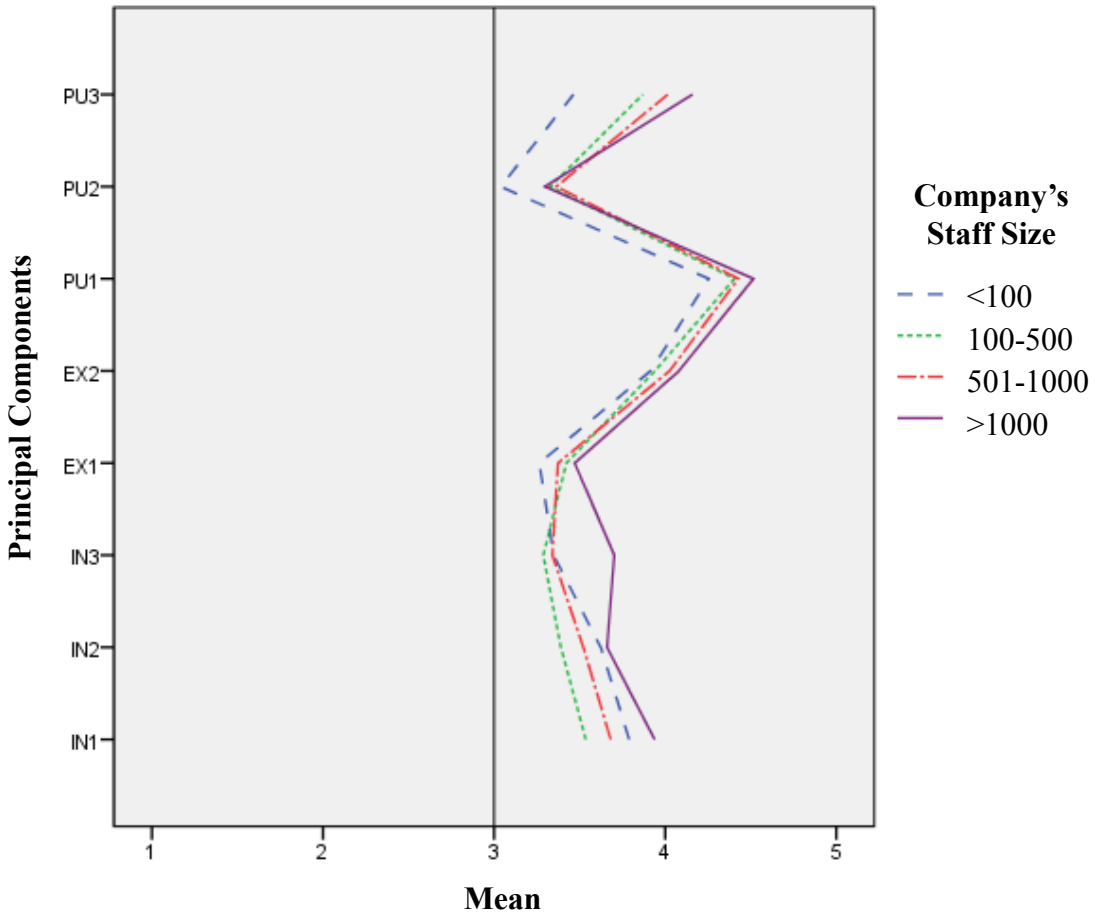


Table 5-21 Influence of Company's Staff Size

Principal Components	F ratios	*p*-values of ANOVA	Post Hoc Tests	Types of Post Hoc Tests
IN1	6.443	0.000*	④>② (*p*-value=0.000*)	Scheffé
IN2	2.965	0.032**	④>② (*p*-value=0.039**)	Scheffé
IN3	7.651	0.000*	④>② (*p*-value=0.001*)	Scheffé
PU2	4.959	0.002*	③>① (*p*-value=0.012**) ④>① (*p*-value=0.010*)	Scheffé
PU3	10.350	0.000*	③>① (*p*-value=0.014**) ④>② (*p*-value=0.039**) ④>① (*p*-value=0.000*)	Scheffé

* Significant at the 0.01 level; ** Significant at the 0.05 level.
Note:①=<100; ②=100-500; ③=501-1,000; ④=>1,000

5.7.5 Discussion

From the above crossover analyses it is now evident that pharmaceutical companies in China that are foreign-owned generally had better CSR performance when compared to joint ventures and state-owned and private ones. Privately owned Chinese pharmaceutical companies showed the lowest level of CSR engagement. These results are basically consistent with the popular impression. Most foreign-owned pharmaceutical companies have stronger sense of CSR than their Chinese counterparts, and their management usually meets international standards. Protection of shareholders' interests and workers' rights is also better implemented. The fact that the concept of CSR emerged in China decades after they became known in the West may partly explain why privately owned Chinese pharmaceutical companies displayed poorer CSR results.

Besides, staff size also had a strong positive effect on CSR practices – the bigger the staff size, the better the company's overall CSR performance. Larger enterprises are usually managed by rules rather than by personal decisions of managers, and this may have led to better implementation of CSR-related policies. Moreover, many large enterprises were publicly listed locally or overseas, and the China Securities Regulatory Commission (CSRC) had extra directives regulating their operations. However, the situation can be reverse in an SME. According to the standard set by China's Ministry of Commerce, companies with a staff of smaller than 250 are considered SMEs. Smaller businesses may lack either the capacity, or the incentive, or both, to improve their CSR as many have yet to understand its meaning, importance, and effect.

Geographic location and history generally had no significant effect on CSR practices, which means these may not be the main determinants of how much a pharmaceutical company engaged in CSR activities.

5.8 Cluster Analysis

Using the eight principal components (each representing a stakeholder) obtained and validated earlier in PCA, three hierarchical cluster analyses by means of Single Linkage / Nearest Neighbour, Complete Linkage / Furthest Neighbour, and Ward's method were performed sequentially. Both the dendrogram and the fusion coefficient versus number of groups through Ward's method suggested that a three or four-cluster solution might be preferable. Figures 5-9 and 5-10 present the results graphically.

Figure 5-9 Dendrogram Using Ward Linkage

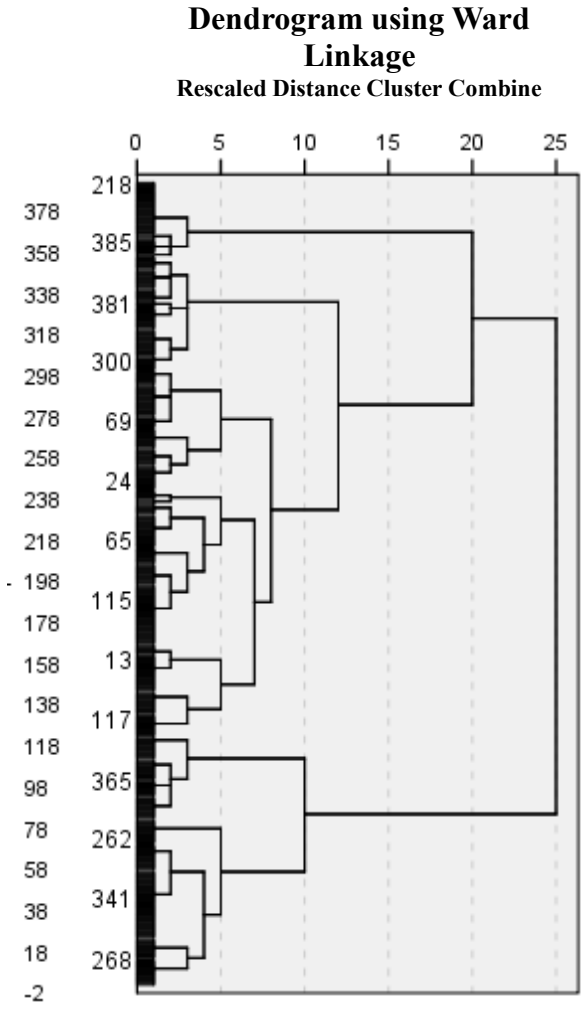
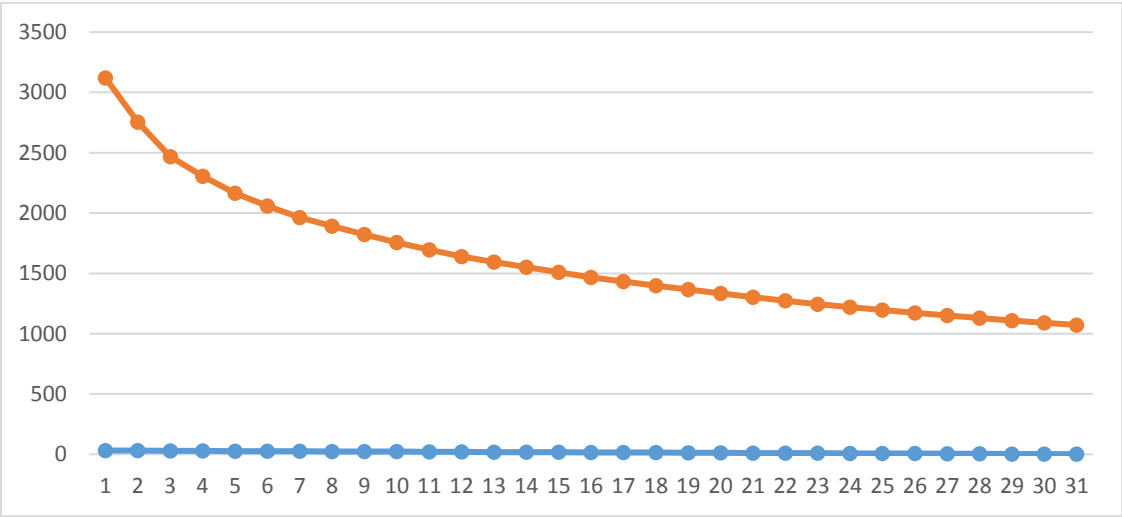


Figure 5-10 Fusion Coefficient Versus Number of Groups Using Ward's Method



The final cluster centres of each principal component based on three and four-cluster assumptions were computed and reported in Tables 5-22 and 5-23. The cases in each cluster were to be cross-tabulated with the three and four-cluster solutions for the calculation and comparison of the percentage of cases equally classified by the hierarchical and non-hierarchical solutions (Tables 5-24 and 5-25).

Table 5-22 Final Cluster Centres (K-means, Three Clusters)

Principal Components	Clusters 1	2	3
IN1	-.35022	.56542	-.49204
IN2	.11407	.16407	-.74743
IN3	-.08942	.30648	-.54818
EX1	-.35457	.72657	-.89987
EX2	.21843	.07080	-.79686
PU1	-.59511	.86976	-.59884
PU2	.36092	.25118	-1.66645
PU3	.24590	-.12074	-.37461

Table 5-23 Final Cluster Centres (K-means, Four Clusters)

Principal Components	Clusters 1	2	3	4
IN1	.25552	-.98330	.55247	-.45911
IN2	.25119	-.03354	.14734	-.84946
IN3	-.68999	.55261	.47046	-.54907
EX1	-.34680	-.19806	.82858	-1.05227
EX2	.34378	-.06873	.03049	-.69910
PU1	-.22406	-.76000	.91686	-.69483
PU2	.11383	.54552	.26996	-1.73074
PU3	.53901	-.17946	-.15422	-.48231

By cross-tabulating the cases included in each solution (three and four clusters respectively) it was concluded that these two solutions showed very similar outcomes in terms of proportion of individuals equally classified (77.1% for the three-cluster solution and 76.7% for the four-cluster solution), with the three-cluster choice being slightly more preferable. Hence three clusters were identified amongst the respondents.

Table 5-24 Cross-tabulation of Ward's Method and K-means (Three Clusters)

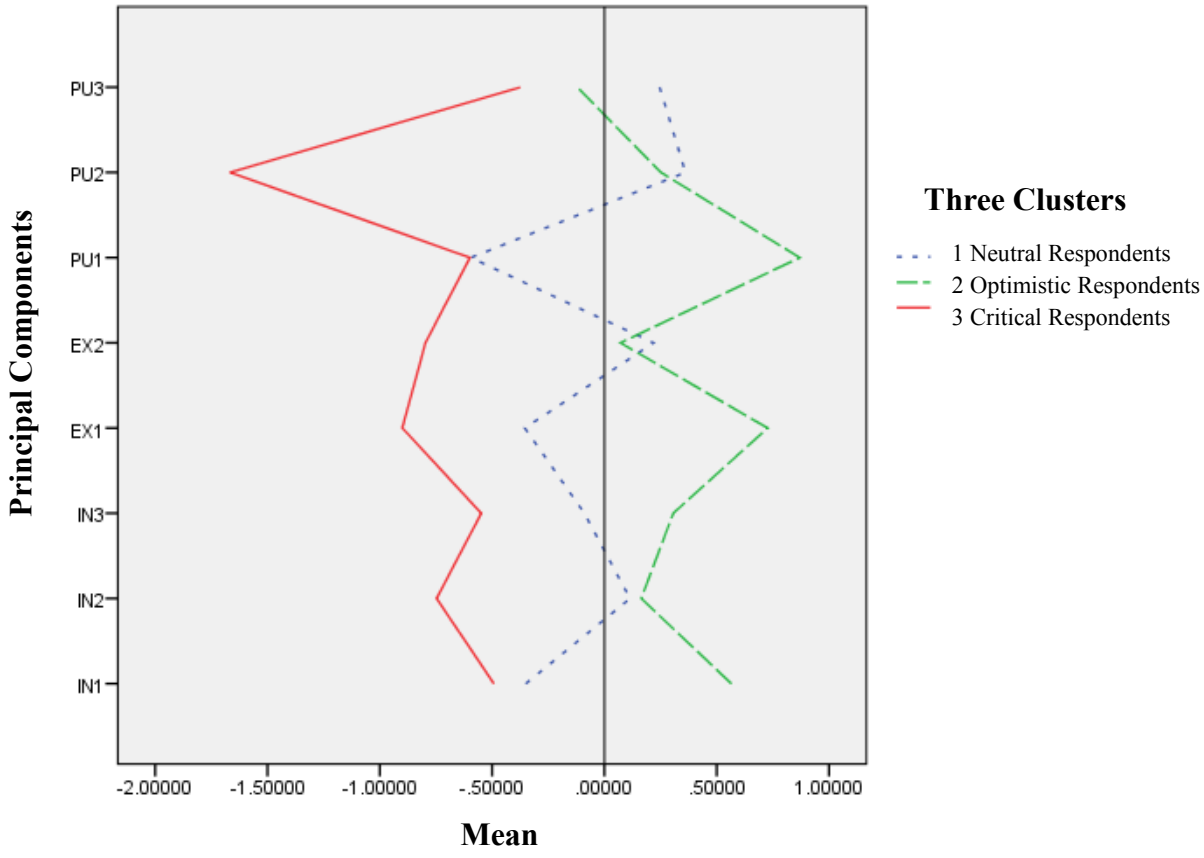
			Ward's Clusters 1	2	3	Total
K-means (3 clusters)	1	Count	161	55	18	234
		% of Total	41.2%	14.1%	4.6%	59.8%
	2	Count	10	104	7	121
		% of Total	2.6%	26.6%	1.8%	30.9%
	3	Count	0	0	36	36
		% of Total	0.0%	0.0%	9.2%	9.2%
Total		Count	171	159	61	391
		% of Total	43.7%	40.7%	15.6%	100.0%

Table 5-25 Cross-tabulation of Ward's Method and K-means (Four Clusters)

			Ward's Clusters				
			1	**2**	**3**	**4**	**Total**
K-means (4 clusters)	**1**	Count	108	22	33	15	178
		% of Total	27.6%	5.6%	8.4%	3.8%	45.5%
	2	Count	2	52	1	1	56
		% of Total	0.5%	13.3%	0.3%	0.3%	14.3%
	3	Count	6	8	104	3	121
		% of Total	1.5%	2.0%	26.6%	0.8%	30.9%
	4	Count	0	0	0	36	36
		% of Total	0.0%	0.0%	0.0%	9.2%	9.2%
Total		Count	116	82	138	55	391
		% of Total	29.7%	21.0%	35.3%	14.1%	100.0%

Figure 5-11 presents the comparison of the three-cluster mean profiles graphically.

Figure 5-11 Graphical Comparison of Three Clusters



The above tables and figure indicate there exist three distinct categories of respondents in terms of perception of CSR practices of Chinese pharmaceutical companies. Those in Cluster 3 (9.2% of the sample) were clearly critical of the situation, with marks for all principal components below the mean level of agreement, especially for PU2 (CSR for the Environment) but comparatively good on PU3 (CSR for the Local

Community). Conversely, informants in Cluster 2 (26.6% of the sample) were obviously more positive as their benchmarks for all principal components except one (PU3 CSR for the Local Community) were above the overall mean level of agreement, with the highest mean agreement score given to PU1 (CSR for the Government). Respondents in Cluster 1 (the largest group, accounting for 41.2% of the sample) seemed to hold a mixed view, with the mean scores for four principal components (IN2 CSR for Managers, EX2 CSR for Consumers (Patients & Doctors), PU2 CSR for the Environment, and PU3 CSR for the Local Community) above the overall mean value and four ones (IN1 CSR for Shareholders, IN3 CSR for Employees, EX1 CSR for Creditors & Suppliers, and PU1 CSR for the Government) below the overall mean. In general, this cluster presents mean levels of agreement in between those of the other two clusters. Accordingly, Clusters 1, 2, and 3 are characterised and named Neutral Respondents, Optimistic Respondents, and Critical Respondents respectively, according to their mean levels of agreement with CSR practices in the pharmaceutical industry of China.

After cross-tabulating the three-cluster solution with the four OMVs in the study, more clues as to the features of the groups of respondents have been uncovered.

As far as geographical location is concerned, Optimistic Respondents (20.8%) are almost twice more likely to come from the South compared to Critical Respondents (11.5%), and there is no further significant difference within this OMV.

For a company's history, Optimistic Respondents (10.7%) are three times more probable to come from companies with a history of less than 10 years compared to Neutral Respondents (2.9%) and Critical Respondents (3.3%), and Critical Respondents (19.7%) are twice more likely to work at companies with a history between 10-20 years in comparison with Neutral Respondents (9.9%). Moreover, chances are that informants from companies with a history of more than 30 years hold a mixed view of their companies' CSR practices (70.2% for Neutral Respondents; 54.7% and 54.1% for Optimistic Respondents and Critical Respondents respectively).

Respondents of the three clusters have displayed significant differences on the OMV of company's type of ownership. Critical Respondents are more likely to be in employment with privately owned companies (62.3%) vis-à-vis Neutral Respondents (38.0%) and Optimistic Respondents (32.1%) whilst less likely to work for foreign-owned companies (13.1%) compared with Neutral Respondents (31.0%) and Optimistic Respondents (34.6%).

Last, members of the three clusters have also exhibited significant differences on a company's staff size. Critical Respondents (23.0%) are three times more likely to come from a company employing fewer than 100 people in contrast to Optimistic Respondents (8.2%) and twice more likely compared with Neutral Respondents (11.1%). Furthermore, there is greater probability that Optimistic Respondents (61.0%) are from companies with more than 1,000 employees when compared to Neutral Respondents (48.5%) and Critical Respondents (41.0%).

A summary of the distribution of the three clusters as per OMV is presented in Table 5-26.

Table 5-26 Summary of Distribution of Clusters as per OMV

Clusters		1 (Neutral)	2 (Optimistic)	3 (Critical)	Pearson χ^2	*p*-values
Geographic Location	East	33.9%	29.6%	29.5%	5.022	0.755
	South	15.2%	20.8%	11.5%		
	West	8.8%	8.2%	11.5%		
	North	33.3%	34.0%	41.0%		
	Central	8.8%	7.5%	6.6%		
History	<10 years	2.9%	10.7%	3.3%	17.335	0.008*
	10-20 years	9.9%	14.5%	19.7%		
	21-30 years	17.0%	20.1%	23.0%		
	>30 years	70.2%	54.7%	54.1%		
Type of Ownership	State-owned	12.9%	14.5%	9.8%	18.559	0.005*
	Privately owned	38.0%	32.1%	62.3%		
	Joint Venture	18.1%	18.9%	14.8%		
	Foreign-owned	31.0%	34.6%	13.1%		
Staff Size	<100	11.1%	8.2%	23.0%	15.027	0.020**
	100-500	28.1%	20.1%	23.0%		
	501-1,000	12.3%	10.7%	13.1%		
	>1,000	48.5%	61.0%	41.0%		

Note: 1. Cluster 1 (Neutral Respondents), Cluster 2 (Optimistic Respondents), and Cluster 3 (Critical Respondents)
2. * Significant at the 0.01 level; ** Significant at the 0.05 level.

5.9 Summary

In addition to finding out how the CSR practices of pharmaceutical companies in China are like, the empirical study has also verified the model structure and proven its goodness of fit and validity. The subsequent crossover study using OMVs has led to the conclusion that foreign-owned pharmaceutical companies and joint ventures generally outperformed their state-owned and privately owned counterparts in terms of CSR

practices, and larger companies also had better CSR citizenship than smaller ones. Besides, three distinct clusters of respondents have also been identified and characterised, namely Neutral Respondents, Optimistic Respondents, and Critical Respondents. To this point, all objectives of the research have basically been reached.

Chapter 6: Conclusion

This research serves as a first attempt to build a theoretical framework to model the CSR practices of pharmaceutical companies in China, and results of the empirical study have demonstrated its credibility. As CSR can be culture-dependent, industry-specific, and stage-sensitive, no scale was in place for the specific purpose of assessing CSR practices of pharmaceutical companies in China today, so findings of the research have filled a gap in literature.

6.1 Research Conclusion and Discussion

The research had two main objectives: developing a scale measuring the CSR practices of pharmaceutical companies in China, and finding out how their CSR practices were like. Now the first goal has basically been attained after the measurement instrument was constructed by performing an extensive literature review as well as applying the GT method, which included techniques such as in-depth interviews, open-ended questionnaire, and many rounds of discussions with experts. The reliability and validity of that instrument were proven satisfactory following relevant procedures. In addition to this, the second purpose of the research was also fulfilled as the subsequent empirical study carried out on more than 200 pharmaceutical companies in China had drawn a general picture of their CSR practices.

Besides, the above achievements have also answered the research questions of to whom pharmaceutical companies are responsible and what they are responsible for. A definition of their CSR was proposed, which represented both general and industry-specific standards; universal as well as culture-dependent norms were also accounted for. Furthermore, the corresponding theoretical model comprised eight stakeholders divided into three categories, which showed good fit according to multiple indicators.

Results also uncovered that pharmaceutical companies in China had overall good CSR practices for Public Entities and External Partners, whereas their CSR for Internal Parties needed urgent improvement, especially for employees. Nevertheless, CSR practices in China's pharmaceutical industry coexist at very different levels. Generally speaking, foreign-owned pharmaceutical companies and joint ventures had better CSR

performance than state-owned and privately owned ones, and businesses with a larger number of employees also outperformed those with a smaller staff size.

Additionally, this research has devised new ways of identification and categorisation of stakeholders, a re-definition of CSR, and an original measurement scale for a specific industry and culture vis-à-vis existing literature. Table 6-1 presents a comparison with selected previous studies.

Table 6-1 Summary of Comparisons with Existing Literature

Authors	Stakeholders	Definitions of CSR	Industries	Countries	Scales	Empirical Studies
Carroll (1979: Page 502)	(None)	'Business encompasses the economic, legal, ethical, and discretionary expectations that society has of organisation at a given point in time.'	General	USA	(None)	Aupperle, Carroll & Hatfield (1985); Pinkston & Carroll (1996); Edmondson & Carroll (1999); Burton, Farh & Hegarty (2000)
Aupperle, Carroll & Hatfield (1985)	(None)	(None)	General	USA	20-set, 80-item	(Being an empirical study itself)
EU Commission (2002: Page 347)	(None)	'...CSR is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis.'	General	EU	(None)	(None)
Moon (2002: Page 3)	(None)	'CSR is only one of several terms in currency designed to capture the practices and norms of new business-society relations. There are contending names, concepts or appellations for corporate social responsibility.'	General	Europe, North America & Asia	(None)	(None)

Sustainability (2004: Page 4)	(None)	'CSR is an approach to business that embodies transparency and ethical behaviour, respect for stakeholder groups and a commitment to add economic, social and environmental value.'	General	UK	(None)	(None)
McWilliams, Siegel & Wright (2006: Page 12)	(None)	'CSR serves as an internal, self-regulating mechanism by which the enterprise examines and practises full compliance with law, ethical requirements, and international standards. It is a process to implement responsibility for its actions and ensures positive influence on its stakeholders.'	General	USA	(None)	(None)
Maignan & Ferrell (2000: Page 284)	Three groups of stakeholders	'…the extent to which businesses meet the economic, legal, ethical, and discretionary responsibilities imposed on them by their stakeholders.'	General	USA & France	Four-dimensional, 18-item	In the same study
Zheng (2006)	Shareholders, managers, employees, creditors, suppliers, distributors, consumers, the government, the environment, and the local community (in three groups)	(None)	General	China	Three-dimensional, 33-item	In the same study

Turker (2009)	Employees, customers, society, government, competitors, natural environment, future generations, NGOs (in four groups)	(None)	General	Turkey	Four-dimensional, 18-item	In the same study
West (2012)	Patients, government, employees, NGOs, local communities, media	(None)	Pharmaceutical	Canada	(None)	(None)
The current research	Shareholders, managers, employees, creditors & suppliers, patients & doctors, the government, the environment, the local community (in three groups)	Pharmaceutical companies endeavour to produce high-quality medicine for a reasonable profit, ensure transparency of product information, respect the rights of their staff, select and manage suppliers in a responsible way, abide by all laws and regulations, minimise their influence on the environment, and contribute to the prosperity of the local community, all under China's social, cultural, and market contexts.	Pharmaceutical	China	Three-dimensional, 36 items	In the same study

6.2 Theoretical Implications

One of the main contributions of this research is that a three-dimensional model consisting of practices carried out by eight stakeholders was proposed to represent the CSR practices of pharmaceutical companies in China, and the empirical assessment carried out supported its validity. Theoretically, the above model was established by combining Carroll's four-dimensional CSR model (1996) and the Stakeholder Theory.

Besides, a 36-item measurement tool developed based on this model was also the first scale in place exclusively constructed for assessing the CSR practices of pharmaceutical companies in China, thereby making contribution to literature by filling a gap. About half of the items were generated through GT, which may provide reference for similar studies in the future.

As far as the definition of CSR is concerned, researchers so far have yet to reach consensus. In this research, after extensive literature review and original study, the CSR of pharmaceutical companies in China was defined as follows: Pharmaceutical companies endeavour to produce high-quality medicine for a reasonable profit, ensure transparency of product information, respect the rights of their staff, select and manage suppliers in a responsible way, abide by all laws and regulations, minimise their influence on the environment, and contribute to the prosperity of the local community, all under China's social, cultural, and market contexts. This definition also exists as the first attempt of its kind in literature.

Since the empirical study was performed not only to test the model but also to reveal the actual CSR practices in China's pharmaceutical industry, it could be concluded from the survey results that most of the companies investigated performed well in terms of CSR for Public Entities and CSR for External Partners, whereas CSR for Internal Parties needed major enhancement.

Through the crossover study using OMVs it was clear that foreign-owned pharmaceutical companies generally had the best overall CSR performance, followed by joint ventures, state-owned, and private ones in a descending order. To be more specific, foreign-owned enterprises and joint ventures outperformed their privately and state-owned counterparts in terms of CSR for Shareholders, Managers, Employees, and the Government; companies employing more than 1,000 or between 501 and 1,000 people also had better CSR performance for Shareholders, Managers, Employees, the

Environment, and the Local Community when compared to those with 100-500 or fewer than 100 employees.

Furthermore, respondents can be classified under three clusters (Neutral Respondents, Optimistic Respondents, and Critical Respondents) according to perceptions of their companies' CSR practices. Neutral (dispassionate and local market oriented) Respondents gave above-mean marks to CSR for Managers, Consumers (Patients & Doctors), the Environment, and the Local Community and below-mean scores to CSR for Shareholders, Employees, Creditors & Suppliers, and the Government. Optimistic (internationally expectant) Respondents rated the CSR practices to all stakeholders highly only except for the Local Community, and most of them worked at foreign-owned companies and those with more than 1,000 employees. Critical (disenchanted) Respondents produced lower-than-average benchmarking results on the CSR practices for every stakeholder, and they were mainly from pharmaceutical companies that were privately owned and those with a staff of fewer than 100.

6.3 Managerial & Policy Implications

For managers of pharmaceutical companies and relevant government departments, the measurement tool developed in this study has highlighted certain areas which deserve special attention in terms of CSR implementation. Furthermore, it has also provided them with an instrument against which to benchmark CSR practices. As every item in the scale represented good CSR behaviour in the pharmaceutical sector, the measurement instrument *per se* can serve as a guideline for pharmaceutical companies to follow.

Managers of privately owned companies, especially SMEs, should recognise the fact that their companies' CSR for Internal Parties, especially those for employees and managers, call for urgent improvement. It is managers and employees who perform the daily management and operations of an enterprise, and better CSR practices for them may lead to their increased job satisfaction and subsequently the overall competitiveness and profitability of the company.

During the in-depth interviews, many employees of pharmaceutical companies complained about the scant protection of their rights, such as forced overtime work without payment, 'starvation' wages, and discrimination on the grounds of age and

gender. As a result, the government should probably tighten law enforcement and introduce severer punishment for offences that infringe workers' legal rights.

6.4 Research Limitations

Despite all efforts to address the weaknesses of the research, certain shortcomings still exist in a number of areas and cannot be ignored.

First, although the measurement instrument itself was constructed after consulting most of the key stakeholders, all information collected to actually assess the CSR practices was only from top and middle managers of pharmaceutical companies. As a result, bias cannot be completely avoided as the survey data solely represented managers' perceptions of the situation. Another concern is that those surveyed may not have acknowledged negative behaviours of their companies due to the social desirability bias even if the survey was 100 per cent anonymous. In other words, there is no knowing to what extent their answers reflected facts or even their opinions, thereby compromising the neutrality and representativeness of the results. However, it can be assumed that the respondents have basically told the truth, because some of them ticked 'strongly disagree' or 'disagree' when asked whether their companies had never been involved in commercial bribery, or whether every effort was made to ensure product quality.

Second, since many of the respondents were middle managers who were in charge of only one area of their companies' management, they might not be familiar with the practices of every department of the company. For instance, an HR manager might not know what measures the company had taken to guarantee product quality, or what efforts the company had made to protect the environment. Nevertheless, some respondents reported this issue during the survey and consulted their colleagues by telephone whilst completing the questionnaire, and their carefulness and full co-operation helped to ensure the accuracy and objectivity of data.

Third, the choice of samples was not completely random. Admittedly, most of the surveyed were those coming to the University to receive training and attend workshops and seminars, and they may not adequately represent the entire industry. Respondents were from around 200 companies in 20 provinces, but nationally there were around 4,000 pharmaceutical companies in China's all 32 provinces.

Fourth, because copies of the questionnaire were filled in face to face and collected immediately after completion, non-response bias was not tested as the non-response rate

was almost zero. Besides, all surveys were conducted virtually in the same period; whilst ensuring the 'time consistency' of the results, it was also impossible to trace any time-sensitive changes as CSR practices may improve or deteriorate along with many factors. For the same reason, test-retest reliability was also not assessed, which was another limitation of the research.

Fifth, most of the pharmaceutical companies surveyed operated nationally or even internationally, so where they were set up may not signify the local business culture of their headquarters. For example, no matter if the Chinese subsidiary of an American pharmaceutical company is based in the East, the North, or the South of China, their corporate culture is unlikely to show significant differences.

Sixth, although as many stakeholders as possible were included in the theoretical model, it still failed to show the entire picture. Some parties, such as news media, NGOs, and public / private medical insurance funds, might also affect or be affected by the practices of pharmaceutical companies, but were not represented. The inclusion of more stakeholders in future research could probably make the model more comprehensive and reflective of the real-world situation.

Seventh, when the crossover study using organisational moderating variables was performed, only the method of one-way ANOVA was adopted. This approach has an inherent weakness in that influence of other variables may also be involved.

6.5 Directions for Future Research

The summary of research limitations has provided insights into possible paths to solving those shortcomings. As far as research impartiality is concerned, future studies could be designed to involve respondents representing other stakeholders, such as patients, doctors, suppliers, or local community managers, to reduce the single-informant bias and develop a more comprehensive and objective assessment of CSR practices. Besides, if third-party CSR evaluators and databases become available in the future, they can also be consulted to ensure neutrality and effectiveness of the appraisal.

Moreover, since businesses are profit-driven, a systematic evaluation of financial gains and costs brought about by various CSR activities should be carried out. Existing studies have shown mixed results, possibly due to difference in research methods and credibility of financial data collected.

In order to entice pharmaceutical companies in China to integrate CSR into their business strategies, determinants of their CSR practices must be found out before relevant laws, regulations, and policies can be effectively formulated. Unfortunately, extant literature on determinants of CSR practices is especially scant, and more attention is called for in this aspect.

Last but definitely not least, CSR practices do evolve over time, and similar research can be conducted again in the future to compare any possible difference. The measurement instrument itself also has to be updated continuously as the development of China's pharmaceutical sector never halts.

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Appendix A: Open-ended Questionnaire

Open-ended Questionnaire about the Corporate Social Responsibility Practices of Pharmaceutical Companies in China

Dear Sir or Madam:

Thank you very much for your time to complete this open-ended questionnaire about the Corporate Social Responsibility Practices of Pharmaceutical Companies in China. This questionnaire is 100 per cent anonymous and will exclusively be used for academic research. Please feel free to answer the following questions according to your own judgement. If you have any questions, please do not hesitate to ask.

Question 1: Who are pharmaceutical companies responsible to?

Question 2: What are pharmaceutical companies responsible for each party you mentioned?

Question 3: What do you expect pharmaceutical companies to do for you as part of their responsibility?

Question 4: Are there any other issues you feel we should know about?

Thank you so much again for your time and support!

Appendix B: Questionnaire for Pre-test (Questionnaire 1)

Questionnaire about the Corporate Social Responsibility Practices of Pharmaceutical Companies in China (Pre-test)

Dear Sir or Madam:

Thank you very much for your time to complete this questionnaire about the Corporate Social Responsibility Practices of Pharmaceutical Companies in China. This questionnaire is 100 per cent anonymous and will exclusively be used for academic research. Please feel free to ask if you have any questions. Thanks again for your kind support!

Part I: Basic Information

1. Geographic Location of Your Company in China: ( )

A. East B. South C. West D. North E. Central

2. History of Your Company: ( )

A. Shorter than 10 years B. 10-20 years C. 21-30 years D. Longer than 30 years

3. Your Company's Type of Ownership: ( )

A. State-owned B. Private C. Joint Venture D. Foreign-owned

4. Your Company's Staff Size: ( )

A. Fewer than 100 B. 100-500 C. 501-1,000 D. More than 1,000

Part II: Items

Please tick the most appropriate answers according to your organisation's practices in 2015.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Our company offers shareholders higher-than-average Return on Investment (ROI) compared to other pharmaceutical companies in China.					
2. Our company always discloses true and complete information to shareholders.					
3. Shareholders clearly know the development strategy of our company.					
4. Managers of our company receive highly competitive salaries.					
5. Managers of our company are quite optimistic about its future.					
6. Our company has created a harmonious environment for its managers.					
7. The management team of our company shows gender equality.					
8. Our company has signed labour contracts with all employees in conformity with law.					
9. Employees of our company receive salaries that are higher than the local average.					
10. Our company has completed pension as well as medical and unemployment insurance payments for all employees in conformity with law.					
11. Employees of our company are unlikely to suffer from occupational diseases, disability or deaths.					
12. Our company supports employees who acquire additional education.					

13. The trade union of our company has played an important role in defending employees' rights.					
14. Our company always pays back its debts in time.					
15. Our company maintains good relationship with its creditors.					
16. Our company uses loans in conformity with the agreement.					
17. Our company has a clear policy for selecting and managing suppliers.					
18. Our company always pays suppliers in full and in time.					
19. All suppliers are treated equally during tenders.					
20. Our company is ISO9001-certified.					
21. Our company has passed GMP certification and always operates in strict conformity with it.					
22. Our company provides full and accurate information about its medicines for consumers, without misleading words, exaggeration of perceived effects, or concealment of side effects.					
23. Our company is responsive to the complaints of consumers.					
24. Our company treats consumers' personal information in the strictest confidence.					
25. Our company invests heavily on R&D to improve the quality of its medicines continuously.					
26. When clinical trials are being performed, patients are fully informed of all relevant details.					
27. Our company has a reasonable pricing policy for all medicines.					
28. In our company, there is a programme in place to recall tainted medicines immediately.					
29. Our company always provides doctors and hospitals with full and accurate information on its medicines.					
30. Our company strictly forbids commercial bribery and rejects illegal 'medicine representatives (*yiyao daibiao*)' during marketing.					
31. Our company values innovation and invests heavily on the development of new medicines.					
32. Our company always pays its taxes on a regular and continuing basis.					
33. Our company seldom faces lawsuits.					
34. Our company complies with legal regulations completely and promptly.					
35. Our company tries to help the government in solving social problems (such as SARS, epidemics, and HIV AIDS).					
36. Our company discharges air, liquid, and solid waste in strict conformity with laws and regulations.					
37. Our company implements special programmes to minimise its negative impact on the natural environment.					
38. In our company, there is a programme in place to reduce the amount of energy and materials wasted in our business.					
39. Our company promptly restores the environment in case of pollution.					
40. Our company contributes to schools, hospitals, and parks according to the needs of the society.					
41. Our company endeavours to create employment opportunities for the local community.					
42. Our company gives adequate contribution (such as donation of money or medicines) to charities.					

Thank you so much again for your time and support!

Appendix C: Questionnaire for Formal Test (Questionnaire 2)

Questionnaire about the Corporate Social Responsibility Practices of Pharmaceutical Companies in China

Dear Sir or Madam:

Thank you very much for your time to complete this questionnaire about the Corporate Social Responsibility Practices of Pharmaceutical Companies in China. This questionnaire is 100 per cent anonymous and will exclusively be used for academic research. Please feel free to ask if you have any questions. Thanks again for your kind support!

Part I: Basic Information

1. Geographic Location of Your Company in China: ( )

A. East B. South C. West D. North E. Central

2. History of Your Company: ( )

A. Shorter than 10 years B. 10-20 years C. 21-30 years D. Longer than 30 years

3. Your Company's Type of Ownership: ( )

A. State-owned B. Private C. Joint Venture D. Foreign-owned

4. Your Company's Staff Size: ( )

A. Fewer than 100 B. 100-500 C. 501-1,000 D. More than 1,000

Part II: Items

Please tick the most appropriate answers according to your organisation's practices in 2015.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Our company offers shareholders higher-than-average Return on Investment (ROI) compared to other pharmaceutical companies in China.					
2. Our company always discloses true and complete information to shareholders.					
3. Shareholders clearly know the development strategy of our company.					
4. Managers of our company receive highly competitive salaries.					
5. Managers of our company are quite optimistic about its future.					
6. Our company has created a harmonious environment for its managers.					
7. Employees of our company receive salaries that are higher than the local average.					
8. Our company supports employees who acquire additional education.					
9. The trade union of our company has played an important role in defending employees' rights.					

10. Our company always pays back its debts in time.					
11. Our company maintains good relationship with its creditors.					
12. Our company uses loans in conformity with the agreement.					
13. Our company has a clear policy for selecting and managing suppliers.					
14. Our company always pays suppliers in full and in time.					
15. All suppliers are treated equally during tenders.					
16. Our company has passed GMP certification and always operates in strict conformity with it.					
17. Our company provides full and accurate information about its medicines for consumers, without misleading words, exaggeration of perceived effects, or concealment of side effects.					
18. Our company is responsive to the complaints of consumers.					
19. Our company treats consumers' personal information in the strictest confidence.					
20. Our company invests heavily on R&D to improve the quality of its medicines continuously.					
21. When clinical trials are being performed, patients are fully informed of all relevant details.					
22. Our company has a reasonable pricing policy for all medicines.					
23. In our company, there is a programme in place to recall tainted medicines immediately.					
24. Our company always provides doctors and hospitals with full and accurate information on its medicines.					
25. Our company strictly forbids commercial bribery and rejects illegal 'medicine representatives (*yiyao daibiao*)' during marketing.					
26. Our company values innovation and invests heavily on the development of new medicines.					
27. Our company always pays its taxes on a regular and continuing basis.					
28. Our company seldom faces lawsuits.					
29. Our company complies with legal regulations completely and promptly.					
30. Our company discharges air, liquid, and solid waste in strict conformity with laws and regulations.					
31. Our company implements special programmes to minimise its negative impact on the natural environment.					
32. In our company, there is a programme in place to reduce the amount of energy and materials wasted in our business.					
33. Our company promptly restores the environment in case of pollution.					
34. Our company contributes to schools, hospitals, and parks according to the needs of the society.					
35. Our company endeavours to create employment opportunities for the local community.					
36. Our company gives adequate contribution (such as donation of money or medicines) to charities.					

Thank you so much again for your time and support!