



**Szent István University**

**Ph.D. School of Management and Business Administration  
Gödöllő**

**Thesis of Doctoral (Ph.D.) Dissertation**

**A Study on Corporate Social Responsibility in  
Chinese Listed Companies**

**Written by:  
Maohua Li**

**Supervisor:  
Dr. Zoltán Zéman  
Full professor**

**Gödöllő  
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# 1. INTRODUCTION

## 1.1 BACKGROUNDS

At the beginning of this century, many environmental cases have a strong impact on investors' confidence in the capital market. After studying many factors of this phenomenon, scholars in the world begin to focus on the corporate social responsibility (CSR). People start to study and pay attention to the effectiveness and transparency of the corporate social responsibility. Entrepreneurs, research scholars, and even the government officials are aware that a good social responsibility system plays an irreplaceable role in the nation's economic growth (Dawkins Cedric E, 2016).

So far, there is no clear and unified conclusion about the concept of corporate social responsibility in China and abroad, and the connotation of corporate social responsibility is changing with the change of social environment. The concept of social responsibility first appeared in 1924, but at that time, the enterprise managers tried to maximize the profit and basically held a negative attitude to the social responsibility. After the 1960s, the enterprises started to pay attention to profit and social interest, so the connotation of social responsibility had been further extended. Carroll, Archie B (1979) proposes that social responsibility is “the sum of responsibilities taken by enterprises on the social economy, law, morality, and charity”, and this concept is still widely used. After that, the concept of social responsibility is derived from the relevant concepts of social response, public responsibility, corporate social performance, economic ethics, corporate citizenship, social responsibility investment and so on. The book “Strategic Management: A Stakeholder Approach” by Freeman. R. Edward (2010) lays the theoretical foundation of the research for CSR and solves the problem that there is no theoretical basis for the corporate social responsibility research. Business Dictionary<sup>1</sup> defines CSR as “A company’s sense of responsibility towards the community and environment (both ecological and social) in which it operates. Companies express this citizenship through their waste and pollution reduction processes, by contributing educational and social programs and by earning adequate returns on the employed resources.”

The research on CSR is very important because it is the only one way that connects the government, corporate, investor in the capital market and other stakeholders. That is to say, CSR is the only way to help our society to sustainable development, and it is also the basic and implacable base for the human to survive. Without CSR, our society cannot be sustainable.

The academic research on CSR begins last century, there are lots of scholars are researching on CSR in the world now. They are focusing on different points of CSR. Some focus on the essence of CSR, and some focus on the relations of CSR, for instance, they do research on the relation between CSR and financial performance. And some scholars make researches on the social

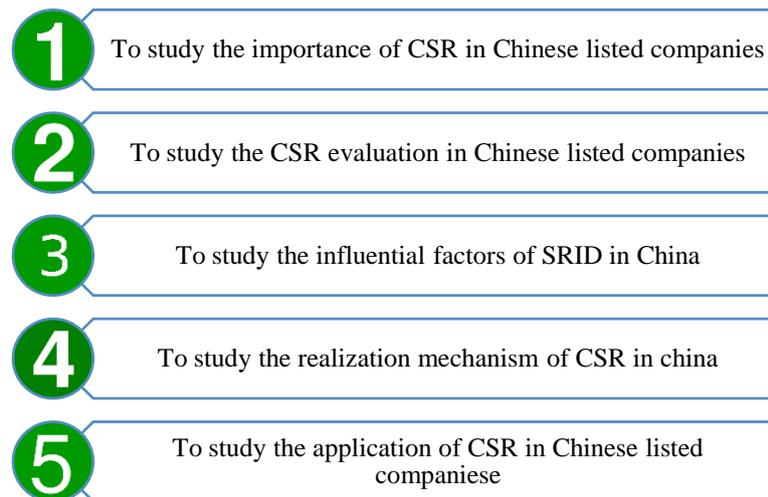
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<sup>1</sup> Business dictionary is the leading online business resource, featuring over 25,000 definitions spanning across critical business-related topics including management, small business, economics, human resources, entrepreneurship, recruiting, and corporate strategy. Each definition provides a clear and concise description of the term to help users gain a comprehensive understanding of the concept. *Source:* <http://www.businessdictionary.com/>

responsibility investment. They get many types of research results; however, nobody does any research on how to realize CSR.

In fact, the realization of CSR concerns many aspects, such as the government, corporate, investor and other stakeholders. So the realization of CSR needs them to cooperate with full energy. The purpose of this part is to design the realization mechanism of CSR in China.

## 1.2 RESEARCH AIMS AND OBJECTIVES



**Figure 1.** Research aims and objective

This thesis is to study the CSR of Chinese listed companies. This thesis contains the following parts: To study the importance of CSR in Chinese listed companies, to study the CSR evaluation in Chinese listed companies, to study the realization mechanism of CSR in China and to study the application of CSR in China.

To study the importance of CSR in Chinese listed companies is the first objective. This dissertation studies the importance of CSR from three dimensions. To study the relation between CSR and EG (economic growth), the relation between CSR and CFP (corporate financial performance) and the relation between CSR and CEI (corporate employee identify) are the three dimensions.

The evaluation of CSR in Chinese listed companies is the second objective which is different from the current CSR score given by several companies. This dissertation considers that the evaluation of CSR should contain two parts: the evaluation of CSR activities and the evaluation of information disclosure of CSR. Nowadays, all the evaluation companies pay more attention to the evaluation of CSR based on CSR activities. How to evaluate the information disclosure of CSR is still a problem. This dissertation wants to set up an evaluation mechanism to fulfill this research gap.

Especially from the beginning of the 21st century, the Chinese government and companies pay more and more attention to CSR. So this part is to find the influential factors for Chinese listed companies. Although the Chinese state has made some laws and regulations on CSR and social

responsibility information disclosure (SRID). This part tries to find the influential factors of SRID in China from companies themselves. As we know, external causes become operative through internal causes, but internal causes contribute to the principal aspect. This part wants to find the relation between LA( logAsset), ROA( Return on Assets), ROE( Rate of Return on Common Stockholders' Equity), CR( Current Ratio), LR( Liability-assets Ratio), PE( P/ E ratios), which are the internal factors of SRID in China with SRID. In order to look for these factors, this study uses correlation analysis and multiple variables linear regression analysis.

One of the key parts is studying the realization mechanism of CSR in China. This dissertation studies the realization mechanism from two points: the general realization mechanism and realization mechanism of CSR in SME.

The last part of this dissertation is on the application of CSR in China. This dissertation selects supply chain management which is very popular as a research object to study the application of CSR in SCM. To build an SCM based on CSR is the special aim of this study.

### 1.3 RESEARCH STRUCTURE

In order to study CSR in Chinese listed companies, this dissertation contains the total of five parts: introduction, scientific methodology, literature review, research results and conclusion, and discussion. All the detail can be seen in table 1.

**Table 1.** Whole Research structure

1. Introduction	1.1 Backgrounds 1.2 Research aims and objectives 1.3 Research structure 1.4 Significance
2. Scientific methodology	2.1 Research strategy and hypothesis 2.2 Research methodology and data sources
3. Literature review	3.1 Conceptual development of CSR 3.2 CSR in America 3.3 CSR in China 3.4 Social responsibility information disclosure 3.5 The function of CSR 3.6 Research implications 3.7 Models of corporate social responsibility 3.8 Arguments about CSR
4. Research results	4.1 The importance of CSR in Chinese listed companies 4.2 The evaluation of CSR in Chinese listed companies 4.3 Influential factors of SRID in China 4.4 The realization mechanism of CSR in Chinese listed companies 4.5 The application of CSR in Chinese listed companies
5. Conclusion and discussion	5.1 Conclusion 5.2 Discussion

From table 1, we can see the whole details of the research structure in this dissertation. First part is the introduction which contains research background, research aims and objectives, research structure and the significance of this dissertation.

The second part is scientific methodology which includes the general hypothesis and research methodologies used in this dissertation. And the third part talks about the research tendency of CSR in China and literature review in China and other countries.

The fourth part is the key part in this dissertation which contains 5 subparts: the importance of CSR in Chinese listed companies, the evaluation of CSR in Chinese listed companies, influential factors of SRID in China, the realization mechanism of CSR in Chinese listed companies and the application of CSR in Chinese listed companies.

Last part is the conclusion and discussion.

## 1.4 SIGNIFICANCE

Economic growth is the fundamental mission of the nation, and a good sustainable economic growth is the key point of success for the nation's economy. At the same time, the nations' another mission is to establish a good social responsibility system, so that it can help enterprises better use of internal and external opportunities to create a better profit. This part is very important for the government officials and the investors in the capital market and the significances contain the following several points:

Firstly, under normal circumstances, good social responsibility and good performance of enterprise will convey a signal of the good governance to the capital market, so as to attract more investors. It can be seen that a well-designed social responsibility system or mechanism plays a very important role in building a favorable the capital market image and improving the performance of the nation's economy.

Secondly, in the capital market, good social responsibility can help investors to understand the full governance information of a listed company, so as to solve the problems of information asymmetry in the investment.

Finally, for the evaluation of economic growth, the traditional methods are concerned with the economic indicators. In a sense, the economic indicators have many advantages: intuitive, easy to compare, and so on. However, with the complexity of business transaction and diversification of the capital market, non-economic information is becoming more and more important, which requires the capital market's more attention to non-economic indicators.

## 2. LITERATURE REVIEW

### 2.1 CSR IN AMERICA

It starts from the USA that making laws and regulations to ensure the implementation of CSR. As early as the beginning of this century, United States requires the administrator of the enterprise to disclosure social responsibility information, and the United States hopes to use a mandatory system to resist the increasingly serious environmental problems (Kolk Ans, 2016).

With the promulgation and implementation of these laws, the social responsibility system has also been recognized by the capital market, and these laws have a significant impact on the other countries in the world.

## 2.2 CSR IN CHINA

In China, the legislation of social responsibility by the government that enforces the mandatory system of social responsibility is only a start. But in the beginning, the laws and regulations relevant to the social responsibility are only implemented in a part of the listed companies in China. And this mandatory system is gradually popularized as the implementation of the "Social Responsibility Guidelines" in 2005. This is a symbol that the disclosure of social responsibility has become mandatory from voluntary, while China's social responsibility system is also becoming more and more perfect (Jinfu Zhu, 2009).

Immediately after that, in order to further the implementation of social responsibility system and the relevant laws, Shanghai Stock Exchange and Shenzhen Stock Exchange have also developed related implementation guidelines on social responsibility. All of these indicate that the social responsibility has been not only fully understood and implemented in listed companies but also paid sufficient attention to the capital market.

In 2007, "Guidance on the state-owned enterprises to fulfill their social responsibility" issued by Chinese State-owned Assets Supervision and Administration Commission of the State Council makes several provisions on the social responsibility of Chinese enterprises. And then, "Guidelines for the preparation of corporate social responsibility reports in China" (CASS-CSR 2.0) issued by Chinese Academy of Social Sciences gives many details about how to prepare a CSR report.

Shanghai Stock Exchange issues several regulations on the CSR, such as "The memorandum No. 1 of the annual report of the listed Corporation in 2009: the preparation and review of the internal control report and social responsibility report", "Guidelines for the preparation of CSR report" etc...

Shenzhen Stock Exchange also issues some regulations on the CSR, such as "Assessment regulation for the information disclosure work of the listed Corporation in Shenzhen Stock Exchange" in 2013, "The memorandum No. 1 of main board information disclosure service-the related issues on periodic reporting disclosure" etc...

## 2.3 SOCIAL RESPONSIBILITY INFORMATION DISCLOSURE

Social responsibility information disclosure (SRID) is the information of the enterprise management authorities to disclose the integrity, rationality, and validity of the social responsibility according to a certain standard (Dawkins, 2016). SRID, carried out by agricultural enterprises, is based on the original evaluation criteria, to determine the establishment of the sound social responsibility, to evaluate its efficiency of CSR, and to issue the assessment report. The existence of this mechanism can help to find the problem in the process of establishing and running the agricultural enterprises social responsibility (Kolk,

2016).

The real purpose of SRID is through accurate and detailed disclosure of agricultural enterprises to help inform users understand the intentions of agricultural enterprises, transfer the good status of agricultural enterprises, and reduce the misunderstandings in the process of information disclosure (Saguy, 2016). With the continuous development of market economy, the governance structure of agricultural enterprises is constantly improving; the information needed is more and more comprehensive, which requires both financial information and non-financial information, and includes both quantitative information and qualitative information (Jha and Cox, 2015). Because of the counterfeit component of quantitative financial information, the users pay more and more attention to non-financial information. However, qualitative and non-financial information is relatively hard to get and analyze, so it is an urgent problem that how to quantify the qualitative information (Xueming and Shuili, 2015).

## 2.4 THE FUNCTION OF CSR

CSR means that corporate is not only responsible to the stockholders but also takes responsibility to the other stakeholders. It contains social responsibility and social obligation, and the content contains business ethics, production safety, occupational health, protection of legitimate rights and interests of workers, protection of the environment, the charity support, the community donation, the protection of vulnerable groups, etc.

In the market economy, the competitiveness of enterprises is the outstanding performance of the ability to pursue profits. Profit is the reason for the existence of enterprises and the fundamental driving force of the development. However, CSR is the foundation of sustainable development and the tool for the long-term profit.

In Hungary, Nagypál N. C. (2014) uses Hungarian SME as a research sample and he finds that corporate social responsibility plays a very important role in the sustained development. Radacsi G. and Hardi P. (2014) point out that CSR is a voluntary add-on to the regular market activities and legal compliances of companies. Metaxas T. and Tsavdaridou M. (2010) make a detailed research on the dimensions and benefits of CSR in Greece, Denmark, and Hungary, and they get the conclusion that the effective implementation of CSR strategy cannot follow strict rules and should be adjusted to the culture, needs and particularities of each country.

## 3 SCIENTIFIC METHODOLOGY

### 3.1 RESEARCH STRATEGY AND HYPOTHESIS

#### *1. There is a positive relation between CSR and EG*

The purpose of this part is to study the relationship between CSR and EG, so we just set up the hypothesis of them, and this part doesn't set up any hypothesis of the relationship between control variables and EG.

#### *2. The relation between CSR and debt financing is positive*

Just like the enterprise in equity financing the enterprise in the social responsibility financing also considers the possibility of market timing. Based on this our paper first proposes the assumption that there should be the choice of the market timing when the enterprise is in the social responsibility financing. Actually early in 2010 Yupei Rao in his book 'behavioral finance' talks about the existence of market timing when the enterprise is social responsibility financing and he believes that enterprises can choose a more appropriate market opportunity for the issuance of bonds which can reduce the cost of financing. If the market interest rate is higher the business operators will tend to use equity financing to reduce the cost of capital and if the market interest rate is low the enterprise will use the social responsibility financing to adjust the cost of capital. In particular large companies will be more cautious in the use of market opportunities they tend to choose a time they make the choice of financing.

### 3.2 RESEARCH METHODOLOGY AND DATA SOURCES

The detailed methodologies that I used in the thesis can be seen clearly in the following table 2.

**Table 2.** Research methodologies used in the thesis

Research purpose	Data collection	Data processing	
		Primary methodologies	Secondary methodologies
To study the importance of CSR in Chinese listed companies	The data for CSR is from the website: <a href="http://www.rksratings.com/">http://www.rksratings.com/</a> The financial data for listed companies is the website: <a href="http://www.sse.com.cn/">http://www.sse.com.cn/</a> and <a href="http://www.szse.cn/">http://www.szse.cn/</a> The other data is from the questionnaire.	Descriptive statistics Legacy dialogs	Linear regression
To study the CSR evaluation in Chinese listed companies			Factor analysis Analytic hierarchy process
To study the realization mechanism of CSR in China			Case study

#### 3.2.1 Linear regression

In statistics, linear regression is an approach for modeling the relationship between a scalar dependent variable  $y$  and one or more explanatory variables (or independent variables) denoted  $X$ . The case of one explanatory variable is called simple linear regression. For more than one explanatory variable, the process is called multiple linear regressions. (This term is distinct from the multivariate linear regression, where multiple correlated dependent variables are predicted, rather than a single scalar variable.)

In linear regression, the relationships are modeled using linear predictor functions whose unknown model parameters are estimated from the data. Such models are called linear models.

Most commonly, the conditional mean of  $y$  given the value of  $X$  is assumed to be an affine function of  $X$ ; less commonly, the median or some other quintile of the conditional distribution of  $y$  given  $X$  is expressed as a linear function of  $X$ . Like all forms of regression analysis, linear regression focuses on the conditional probability distribution of  $y$  given  $X$ , rather than on the joint probability distribution of  $y$  and  $X$ , which is the domain of multivariate analysis.

### *3.2.2 Factor analysis*

Factor analysis is a statistical method used to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved variables called factors. For example, it is possible that variations in six observed variables mainly reflect the variations in two unobserved (underlying) variables. Factor analysis searches for such joint variations in response to unobserved latent variables. The observed variables are modeled as linear combinations of the potential factors, plus "error" terms. Factor analysis aims to find independent latent variables. Followers of factor analytic methods believe that the information gained about the interdependencies between observed variables can be used later to reduce the set of variables in a dataset. Factor analysis is not used to any significant degree in physics, biology, and chemistry but is used very heavily in psychometrics personality theories, marketing, product management, operations research and finance. Users of factor analysis believe that it helps to deal with data sets where there are large numbers of observed variables that are thought to reflect a smaller number of underlying/latent variables. It is one of the most commonly used inter-dependency techniques and is used when the relevant set of variables shows a systematic inter-dependence and the objective is to find out the latent factors that create a commonality.

### *3.2.3 Analytic hierarchy process*

The analytic hierarchy process (AHP) is a structured technique for organizing and analyzing complex decisions, based on mathematics and psychology. It was developed by Thomas L. Saaty in the 1970s and has been extensively studied and refined since then.

It has particular application in group decision making and is used around the world in a wide variety of decision situations, in fields such as government, business, industry, healthcare, shipbuilding, and education.

Rather than prescribing a "correct" decision, the AHP helps decision makers find one that best suits their goal and their understanding of the problem. It provides a comprehensive and rational framework for structuring a decision problem, for representing and quantifying its elements, for relating those elements to overall goals, and for evaluating alternative solutions.

### *3.2.4 Case study*

Case studies can be produced by following a formal research method. These case studies are likely to appear in formal research venues, as journals and professional conferences, rather than popular works. The resulting body of 'case study research' has long had a prominent place in many disciplines and professions, ranging from psychology, anthropology, sociology, and political science to education, clinical science, social work, and administrative science.

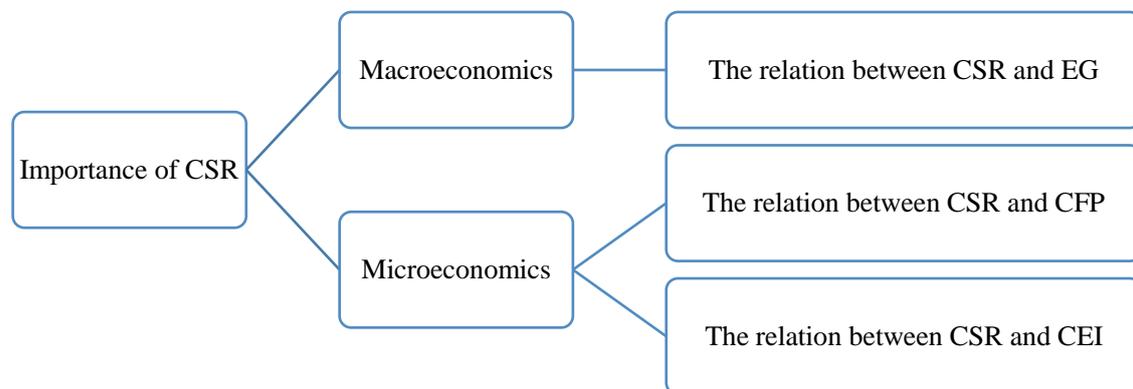
In doing case study research, the "case" being studied may be an individual, organization, event, or action, existing in a specific time and place. For instance, clinical science has produced both

well-known case studies of individuals and also case studies of clinical practices. However, when "case" is used in an abstract sense, as in a claim, a proposition, or an argument, such a case can be the subject of many research methods, not just case study research. Case studies may involve both qualitative and quantitative research methods.

## 4. RESULTS

### 4.1 THE IMPORTANCE OF CSR IN CHINESE LISTED COMPANIES

In order to study the importance of CSR in Chinese listed companies, this dissertation talk about the importance from total three dimensions: macroeconomics, company, and employee which can be seen in the following Figure 2.



**Figure 2.** The importance of CSR in Chinese listed companies

Figure 2 shows us the whole details of importance researched on in this dissertation. This dissertation, from macroeconomics and microeconomics, talks the relations among CSR, EG, CFD, and CEI.

#### 4.1.1 THE RELATION BETWEEN CSR AND EG

As the economy is growing, many problems occur, such as environmental problems. Scholars and government officials begin to focus on the corporate social responsibility (CSR). This part is to study the relationship between corporate social responsibility (CSR) and Chinese economic growth (EG), and this part wants to provide a reference for the government officials in China and the investors in the capital market. This part takes two separate research steps to achieve the research objective. Firstly, in order to test the relationship between the level of CSR and the economic growth, this part uses the independent-samples T test. Secondly, this part builds multiple variables linear regression models and uses the SPSS 22 software to analyze the correlation between CSR and Chinese economic growth. As a result, this part finds that a relatively high level of CSR results in a more objective economic growth, on the contrary, the economic growth of the time when companies are not willing to take on the corporate social responsibility may be very general.

##### *a. Correlation Analysis*

In this part, firstly we do the independent-sample T-test in order to verify the relationship

between the level of CSR and economic growth in China. And then we want to test the correlation among the independent variables in order to check whether the variables are suitable for the next multiple variables linear regression analysis.

**-Independent-samples T-test**

In order to test whether there are some differences in the economic growth with different level of CSR, this part classifies the enterprises from Chinese Stock Exchange into groups by the ranks we set in table 8. In the calculation process, this part not only calculates the mean value of the performance indexes of sample data, but also calculates the D-value of performance indexes between adjacent grades, and to substitute them into the T-value formula to determine the significant difference. The results are as follows (Table 3):

**Table 3.**The results of independent-samples T test

					excellent—good		good—qualified		qualified—disqualified	
	disqualified	qualified	good	excellent	D-value	T-value	D-value	T-value	D-value	T-value
PCDI	-0.45	-0.05	0.25	0.97	0.72	4.16*	0.30	2.26*	0.40	2.35*
RGDP	-0.25	-0.20	-0.06	0.23	0.29	2.63*	0.14	0.76	0.05	0.22
EVA	-0.11	-0.01	0.04	0.08	0.04	0.64	0.05	0.89	0.10	1.21
ATR	0.26	0.48	0.66	0.93	0.27	2.32*	0.18	1.70*	-0.29	-1.25

\*. Correlation is significant at the 0.05 level

From the parameter test results (Table 3): the EVA of industry (EVA), the increasing rate of GDP (RGDP), the increasing rate of investment in the fixed assets (ATR) and the increasing rate of per capita disposable income (PCDI) are increasing with the increasing of CSR levels, especially from the excellent group to the good group. This means there is a positive relationship between CSR level and EG. The increasing rate of per capita disposable income (PCDI), the increasing rate of GDP (RGDP), and the increasing rate of investment in the fixed assets (ATR) are significant differences among different groups, in contrast, the difference in the rest is not very obvious. The result in the table above verifies the hypothesis that there is a positive relationship between CSR and EG. However, for the further verification of the hypothesis, this part continues to take multiple variables linear regression analysis.

**-Correlation among the independent and control variables**

Though we have already taken methods to deal with independent and control variables to solve the multiple collinearity diagnostics problem, we take correlation analysis to the independent and control variables in order to test whether the independent and control variables are independent and suitable for multiple variables linear regression analysis. The results are shown in table 4.

**Table 4.** Correlation analysis among variables and control variables

		RKS	DTA	SIZE	LOSS	ST
RKS	Pearson Correlation	1				
	Sig. (2-tailed)					
DTA	Pearson Correlation	0.008	1			
	Sig. (2-tailed)	0.000***				

SIZE	Pearson Correlation	0.181	0.021	1		
	Sig. (2-tailed)	0.006***	0.747			
LOSS	Pearson Correlation	0.055	0.004	-0.034	1	
	Sig. (2-tailed)	0.407	0.955	0.610		
ST	Pearson Correlation	0.131	0.160	0.122	-0.014	1
	Sig. (2-tailed)	0.047**	0.014**	0.064*	0.831	

It can be seen in table 4 that this part divides the correlation among all the variables into 4 types by the significance level. The significance level in the table without mark “\*” means that the significance level of them is greater than 0.05, so the correlation among them can be rejected directly. There is only one significance level with one mark “\*”. One “\*” means that the significance level of it is near to 0.05, however, the correlation coefficient is only 0.122. In this case, there is only a very weak correlation between ST and SIZE. The significance level in the table with two or three marks “\*” means that although they have a very satisfying significance level, the correlation coefficient for them is very weak. All the 4 types tell us that all of them either have a weak correlation coefficient or have an unacceptable significance level.

From the table 4, we know that the relation among the independent and control variables is not significant. The highest Pearson coefficient is 0.131 which is the relationship between RKS and ST. And the lowest coefficient is 0.004, which is the relationship between DTA and LOSS. All these coefficients indicate that the independent and control variables are independent, so they are suitable for the multiple variables linear regression analysis.

#### *b. Multiple Variables Linear Regression Analysis*

-Construction of the regression analysis model

This part constructs a regression model to study the impact of corporate social responsibility (CSR) on economic growth (EG). The four traditional economic indicators that can express the economic growth of the nation are selected. The explanatory variable is used to reflect the status of the social responsibility while taking some control variables into account. The multiple variables linear regression models are designed as follows:

$$PCDI = \beta_0 + \beta_1 \times RKS + \beta_2 \times DTA + \beta_3 \times SIZE + \beta_4 \times LOSS + \beta_5 \times ST + \varepsilon \quad \text{Formula 1}$$

$$RGDP = \beta_0 + \beta_1 \times RKS + \beta_2 \times DTA + \beta_3 \times SIZE + \beta_4 \times LOSS + \beta_5 \times ST + \varepsilon \quad \text{Formula 2}$$

$$EVA = \beta_0 + \beta_1 \times RKS + \beta_2 \times DTA + \beta_3 \times SIZE + \beta_4 \times LOSS + \beta_5 \times ST + \varepsilon \quad \text{Formula 3}$$

$$ATR = \beta_0 + \beta_1 \times RKS + \beta_2 \times DTA + \beta_3 \times SIZE + \beta_4 \times LOSS + \beta_5 \times ST + \varepsilon \quad \text{Formula 4}$$

-The population regression analysis

This part firstly takes the population regression analysis to test how much the expectation of the economic growth can be explained by the total function. Through the analysis, the results can be seen in table 5.

**Table 5.** Model of Summary

Model <sup>a</sup>	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	.757 <sup>b</sup>	.573	.543	27.36313
2	.722 <sup>b</sup>	.412	.407	28.14271
3	.675 <sup>b</sup>	.465	.443	26.44478
4	.664 <sup>b</sup>	.441	.421	28.84275

a. Models: PCDI, RGDP, EVA, ATR b. Predictors: (Constant), PKS, DTA, SIZE, LOSS, ST

From the table 5, we can see that the total function can explain the major expectation (more than 40%) of the economic growth. For the model 1,  $R^2=0.573$ , which means that 57.3% of the expectation of PCDI can be explained by the model 1. The adjusted R square is 0.543, which means that the regression equation fits our research data well. And the standard error of the estimate is 27.36313, which means that the prediction of the total function is of accuracy. For the other 3 models, the  $R^2$  value of the model is less than model 1, however, this part's result is similar to other scholars' research results. That is to say,  $R^2$  is generally 10%-50%. So the models fit the actual situation of the nation in China.

-The multiple variables linear regression analysis

This part uses SPSS 22 software, puts the sample data into the model, and uses multiple variables linear regression models to estimate. The results are as follows (Table 6):

**Table 6.** The multiple variables linear regression results of CSR and economic growth<sup>2</sup>

	Model 1	Model 2	Model 3	Model 4
RKS	0.25(1.87)	0.29(2.23)	0.11(2.14)	0.51(2.51)
DTA	-1.31*(-1.39)	-0.43**(-3.45)	-0.89*(-1.08)	-0.06(-0.30)
SIZE	0.51(0.83)	0.35*(2.30)	0.03(1.35)	0.06(1.39)
LOSS	-0.83**(-3.76)	-0.31**(-3.72)	-0.26**(-4.87)	-0.02(-0.21)
ST	-0.06(-0.04)	-0.22*(-1.10)	0.05(0.23)	0.53(0.14)
F	7.35	5.22	5.41	3.19
R <sup>2</sup>	0.57	0.41	0.47	0.44

\*\* . Correlation is significant at the 0.01 level, \* . Correlation is significant at the 0.05 level, and T-value is in the bracket.

In order to verify the relationship between the social responsibility and the nation's economic growth, we select 681 listed companies from China as a research sample. To reflect the economic growth of the nation, we select four traditional economic indicators such as the EVA of industry (EVA), the increasing rate of GDP (RGDP), the increasing rate of investment in the fixed assets (ATR) and the increasing rate of per capita disposable income (PCDI). The explanatory variable is the adjusted CSR Reports Ranking (RKS) from Lingyun Company. The control variables selected are debt to total assets ratio (DTA), enterprise asset (SIZE), loss or not (LOSS), special treatment or not (ST). After correlation analysis of the social responsibility and performance of nation, this part uses SPSS 22 software to establish the regression model and to make the multiple variables linear regression analysis.

<sup>2</sup> In the process of multiple linear regression analysis, we analyze the models one by one. However, in order to interpret and compare the results easier, we put the multiple linear regression analysis results together.

Through the independent-samples T-test, we know that there is a positive relationship between the level of CSR and economic growth which verify our hypothesis that there is a positive relationship between CSR and EG. That is to say when the level of CSR in China is higher, the economic growth is also better. However, the difference in the rest of the index is not very obvious, which also mean that there is a relationship between the CSR and the EG. In order to verify the relationship between CSR and EG further, we continue to take a linear regression analysis.

Through the correlation analysis, we get the result that CSR and EG are really correlated and there is little relation among the independent and control variables which mean the independent and control variable we selected is suitable for the linear regression analysis. In order to verify the strength and direction of the relationship between CSR and EG, we take the linear regression analysis.

Through multiple variables linear regression analysis, we find that the quality of social responsibility is positively related to the nation's economic growth. It shows that a higher quality of social responsibility can bring a more outstanding economic performance for the nation. At the same time we also find that if the quality of corporate social responsibility is lower, the economic growth is also very general. Through the T-test, we can find that the quality of corporate social responsibility has an impact on economic growth, and this impact is not temporary, but sustainable. However, T-value (in the bracket) is not so large, the adjusted goodness of fit is not very good and  $R^2$  is generally 10%-50%. One reason for this situation is that we only select the research sample from China. So when we want to further my research, we will select more samples from other countries, which will make the results more reliable.

#### *4.1.2 THE RELATION BETWEEN CSR AND CFP*

This part is to study the relationship between information disclosure and corporate business performance. This part provides a reference for the investors and the managers of the listed companies in the capital market.

In order to verify the hypothesis that social responsibility information disclosure and organization change have a positive correlation, this study uses an independent samples t-test. Then we build the multivariable linear regression model, and finally, use the E-views 6.0 software to analyze the correlation between the Social responsibility information disclosure and organization change.

As a result, this part finds that a relatively high level of social responsibility information disclosure of enterprises tends to have a more objective organization change, on the contrary, a company is not willing to disclose the Social responsibility information of the enterprise may be very general.

#### *-Independent-samples T-test*

In order to test whether there are some differences in the performance of enterprises with different level of information disclosure, this part test the listed companies from Shenzhen Stock Market in groups. And the groups are divided by the grad of information disclosure. In the calculation process, not only to calculate the mean value of the performance indexes of

sample data, but also to calculate the D-value of performance index between adjacent grade, and to substitute them into the T value formula to determine the significant difference. The results are as follows (Table 7):

**Table 7.** The test results of enterprise grouped

	disqualified	qualified	good	excellent	excellent— good		good— qualified		qualified— disqualified	
					D- value	T- value	D- value	T- value	D- value	T-value
EPS	-0.45	-0.05	0.25	0.97	0.72	4.16*	0.30	2.26*	0.40	2.35*
ROE	-0.25	-0.20	- 0.06	0.23	0.29	2.63*	0.14	0.76	0.05	0.22
ROA	-0.11	-0.01	0.04	0.08	0.04	0.64	0.05	0.89	0.10	1.21
ATR	0.76	0.48	0.66	0.93	0.27	2.32*	0.18	1.70*	-0.29	-1.25

\* Represents 10% significant level

From the parameter test results (Table 7): return on total assets ratio (ROA), return of rate (ROE), total assets turnover rate (ATR) and earnings per share (EPS) are increasing with the increase of information disclosure levels, especially between the elite group and the good group. Earnings per share (EPS), return of rate (ROE), total assets turnover rate (ATR) are significant differences, in contrast, differences in the rest of the index is not very obvious.

#### - Construction of the regression analysis model

This part constructs a regression model to study the impact of social responsibility information disclosure on organization change. The four traditional financial indicators that can express the organization change of the enterprise are selected, and the explanatory variables are used to reflect the status of the social responsibility information disclosure while taking some control variables into account. The multiple regression models are designed as follows:

$$Performance_i = \alpha_0 + \alpha_1 \times IDAR + \alpha_2 \times CR10 + \alpha_3 \times B + \alpha_4 \times Boardsize + \alpha_5 \times IndDir + \alpha_6 \times DTA + \alpha_7 \times Detach + \alpha_8 \times Size + \alpha_9 \times Loss + \alpha_{10} \times St + \alpha_{11} \times Adjust + \varepsilon$$

Formula 5

In above formula,  $i=1, 2, 3, 4$ , which stand for EPS、ROE、ROA and ATR.

#### -Analysis of the regression analysis model

This part uses E-views 6.0 software, puts the sample data into the model, and uses multiple linear regression method to estimate. The results are as follows (Table 8):

**Table 8.** The multiple regression results of Information disclosure and performance of listed companies

	EPS	ROE	ROA	ATR
IDAR	0.24 (1.97)	0.31 (2.12)	0.01 (2.24)	0.48 (2.60)
CR10	0.98* (1.84)	0.05 (0.36)	0.28* (1.99)	-0.49 (-0.42)
B	-0.01 (-0.35)	-0.03 (-0.17)	0.00 (0.94)	0.01 (0.42)
Boardsize	0.03 (0.50)	0.03 (0.60)	0.01 (0.21)	0.02 (0.39)

IndDir	0.27* (2.35)	0.91** (2.71)	0.17 (0.56)	0.06 (0.78)
DTA	-1.23* (-1.39)	-0.33** (-3.45)	-0.95* (-1.10)	-0.05 (-0.24)
Detach	-0.01 (-0.12)	0.44 (1.32)	-0.04 (-1.50)	0.05 (0.66)
Size	0.46 (0.83)	0.36* (2.30)	-0.02 (-1.45)	0.05 (1.49)
Loss	-0.79** (-3.76)	-0.29** (-3.72)	-0.27** (-4.97)	-0.01 (-0.12)
St	-0.01 (-0.04)	-0.15* (-1.90)	0.02 (0.23)	0.50
Adjust	-0.15 (-0.62)	-0.19* (-1.81)	-0.25** (-2.16)	-0.67 (-5.03)
F-value	7.55	5.17	5.53	2.29
R <sup>2</sup>	0.46	0.36	0.38	0.15

\*\* Represents 1% significant level, \* Represents 5% significant level, and T-value is in the bracket.

From the results of the analysis in table 8, the F test statistical probability of regression coefficient is approximately zero, indicating that the results of multivariate regression analysis are statistically significant, and the data analysis is effective. But the R<sup>2</sup> value of the model is less, T-value is not so large, and the adjusted goodness of fit is not very good. However, this is similar to other scholars' research results, that is, R<sup>2</sup> is generally 10%-30%. So the model fits the actual situation of the listed companies in China.

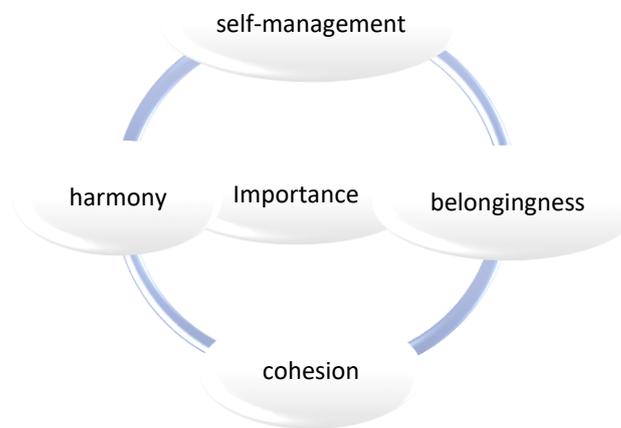
Based on the results of data analysis, it is proved that there is a significant positive correlation between the quality of social responsibility information disclosure and the operating performance of listed companies. It shows that the social responsibility information disclosure of Listed Companies in our country has already had a certain degree of decision-making usefulness.

#### 4.1.3 THE RELATION BETWEEN CSR AND CEI

Corporate social responsibility (CSR) has been one of the hot topics for years. However, up to now, there is no research on CSR from the view of corporate identity. This part is to study corporate social responsibility elements found in the employee's corporate identity. As we know, CSR is the responsibility taken by a company to the public, the employees, the environment and others. An employee is the core resource for the development of a company. To get the employee corporate identity is the first social responsibility taken by a company to the employee. Through the study in this part, it can be seen that there is a positive relation between CSR and employee corporate identity. That is to say, if a company cares more about CSR on employees, they will work more like the owner of a company with full energy and satisfaction. To provide a relatively satisfactory salary, to provide the basic support for an employee to work and to make a better career development for the employee are the key social responsibility taken to get employee corporate identity. However, social responsibility is mutual, if corporate takes more responsibilities to an employee, an employee should take more responsibilities to incorporate too, and that is to say, an employee should express more identities to corporate.

CSR is also very important for the sustainable development of corporate. Identity is the cornerstone of one of the most important areas of study in recent years. Corporate identity is the key issue for the corporate management from the beginning of the 21st century. Due to the importance of corporate identity to the whole corporate, it attracts more and more attention from the academic and practical. And employee identity is the key point of corporate identity. Once the employees form a very strong identity to the whole company, they will treat

themselves as the real member of the whole organization and work by themselves without monitoring. The importance of employee identity can be summarized in the following Figure 3.



**Figure 3.** The importance of the employee identity

There is a total of four main functions of employee identity summarized by the author in Figure 3. A good employee identity can lead to a good self-management by an employee. In this situation, the management cost of corporate will be reduced and the management level and efficiency will be increased rapidly. A good-designed employee identity can increase the employees' feeling of belonging. The increased feeling of belongings will make an employee feel that they are working not for the salary but for their creativity. And they are not working for employers but working for themselves.

For studying the influential factors of employee identity based on CSR, this part uses SPSS 22.0 to do cluster analysis. In order to study the influential factors of employee identity based on CSR better, this part removes the first 8 basic questions from the total 44 questions which talk about the fundamental information of the people being investigated. This part uses K-means cluster analysis of SPSS 22.0 to analysis the remaining 36 questions. The cluster membership is shown in table 9.

**Table 9.** Cluster membership

Case Number	Cluster	Distance	Case Number	Cluster	Distance
9	1	12.352	5	3	12.901
10	1	15.463	6	3	12.266
11	1	5.902	8	3	6.616
13	1	12.808	2	4	9.608
14	1	3.937	3	4	10.222
15	1	10.791	4	4	6.915
16	1	16.212	12	4	4.241
17	1	10.92	24	4	16.608
21	1	8.48	28	4	13.108
22	1	20.492	30	4	18.524

23	1	8.102	31	4	15.226
25	1	22.655	32	4	13.607
26	1	12.4	33	4	19.553
27	1	15.698	34	4	18.569
29	1	14.63	1	4	14.514
7	2	8.055	18	5	13.654
19	2	8.42	35	5	10.791
20	2	13.695	36	5	3.712

After the K-means cluster analysis, this part gets total 5 clusters of the 36 questions in the questionnaire. From the first cluster, cluster 1 talks about CSR on the employee. That is to say, if corporate wants to get more employee identity, it should take more social responsibilities to the employee. For instance, corporate should provide clearer career plan for the employee. Corporate should provide more fair chances for employee to take part in learning and training. Corporate should provide relatively competitive salaries for the employee.

As we know, responsibility is mutual. So in the cluster 1, we also see that employee think they should take responsibility for corporate too. For example, the employee should work hard for corporate with full energy. The employee has the obligation to work for corporate. Employees should love corporate as they love their family. This also means that if corporate takes more social responsibilities to the employee, the employee will also feel more responsibilities to corporate.

Cluster 2, cluster 3, cluster 4 and cluster 5 are also talking about the relationship between corporate social responsibilities to the employee and employee identity. In cluster 2, 3, 4 and 5, we can see that social responsibility is the key influential factor of employee identity. The mutual responsibility to employee and corporate helps each other to cooperate better and helps to improve corporate performance.

## 4.2 THE EVALUATION OF CSR IN CHINESE LISTED COMPANIES

Nowadays, there are several companies in the world to evaluate CSR for listed companies which are focusing on the activities taken by the listed companies. As we know, the activities of listed companies are very important. However, the CSR information is also important to evaluate the CSR of listed companies. So the final evaluation framework should be like the following formula.

$$CSRS = AS \times IDS \quad \text{Formula 6}$$

CSRS: Corporate social responsibility score

AS: Activity score

IDS: Information disclosure score

From the formula above, corporate social responsibility score should contain two parts: the activity score and information disclosure score. Activity score used in this part is from the Chinese company (<http://www.rksratings.com/>). And the evaluation of information disclosure

of listed companies will be studied further in this chapter.

#### 4.2.1 THE EVALUATION FRAMEWORK OF CSR IN CHINESE LISTED COMPANIES

In the process of SRID evaluation framework construction, in order to ensure the reliability and accuracy of the results, this part selects 200 Chinese agricultural enterprises from Shenzhen and Shanghai Stock Exchange as the research sample. Social responsibility report belongs to the “control self-appraisal (CSA)”, which is a proactive corporate self-examination (Sandoval, 2015). This part selects 200 samples, and the time range of the samples is from 2009 to 2015. Thus there is no conflict between the old and the new accounting system in China, which reflects the timeliness of this study. Since the preparation of this part began in 2015, the reports in 2015 of the samples were selected for the first half year. Subject to the limitations of the study conditions and the actual consideration of the workload, the number of samples selected should not be too large. This part selects 200 the agricultural enterprises in China.

During the verification of the framework, we take the 560 Chinese agricultural enterprises as the questionnaire sample, to issue the questionnaires to the relevant agricultural enterprises. 500 electronic copies of the questionnaire are issued by the internet, and 360 electronic copies are recovered. A total of 60 questionnaires are issued by printing and 60 printed copies are recovered. The details are shown in table 10. This part randomly selects 40% of them to do an exploratory factor analysis, and the remains 60% are used to do a confirmatory factor analysis.

**Table 10.** Descriptive statistics of Questionnaires of 60 Chinese agricultural enterprises

Classification	Number	Percentage
Farming	14	23.34%
Forestry	5	8.33%
Animal Husbandry	8	13.33%
Side-line Production	11	18.33%
Fishery	13	21.67%
Integrated Agriculture	9	15.00%
Total	60	100%

When constructing the framework, this part mainly studies the self-evaluation reports of SRID of agricultural enterprises in China. Through the sample research with oral theme encoding, this part analyzes the social responsibility self-evaluation reports of agricultural enterprises and finds out the evaluation characteristics of SRID. And then the evaluation framework is obtained through the frequency analysis, consistency test and reliability test.

In order to verify the SRID evaluation framework, we use two methods. First, the expert opinion method is used to verify the framework. Secondly, this part uses factor analysis to further verify the SRID framework.

Firstly, the SRID evaluation framework is verified by the expert opinion method. In order to verify the SRID evaluation framework of agricultural enterprises, we use the traditional expert opinion method to verify the validity of the evaluation framework. We have invited 8 experts from 20 agricultural enterprises in China, including corporate executives, financial executives, and business executives. The author is as the host of the interview, and two students are as recorders. In order to ensure the success of the interview, we first compile an outline of the

interview and prepare two recording pens, two notebooks, and some pens.

Secondly, the evaluation framework is verified by factor analysis. According to the evaluation framework established, this part prepares the SRID evaluation framework self-rating questionnaire, and each indicator is subdivided into polygraph questions and verification questions. The whole questionnaire contains a total of 24 questions. Each question is divided into five grades, and the grade is defined by 1-5. According to the data source for this part, we deal with the data obtained from the paper questionnaire and the network questionnaire separately. We use SPSS 22.0 software and LISREL8.70 software to analyze the data collected with Bartlett's test and factor analysis.

#### *4.2.2 THE APPLICATION OF AHP IN SRID EVALUATION FRAMEWORK*

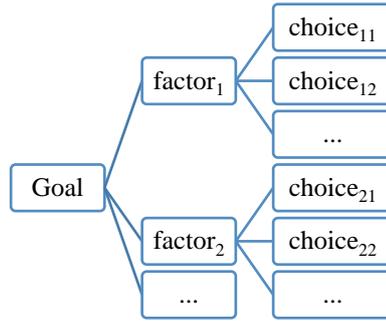
The Analytic Hierarchy Process (AHP) has been invented by SAAS and has been applied in many fields (Lin et al, 2015). It is very helpful in a complex problem for the decision makers. And the AHP divides the deciding goal into many factors, and each factor contains various decision choices. Through the comparison of the elements (factors and choices) in the AHP, the decision makers can build the comparison matrix. And through computing the Eigenvector and Eigenvalue, the decision makers can get the weights of all the elements and make the decision which best suits the problem.

This part wants to apply this AHP to the SRID evaluation framework of agricultural enterprises which is constructed by Maohua Li<sup>3</sup> (2016). Though Maohua Li (2016) builds the SRID evaluation framework of agricultural enterprises, how to apply this framework to the real agricultural enterprises is a problem. This part attempts to use the analytic hierarchy process to solve this problem, and tries to give the corresponding weights to each item (factor and choice) in this framework, so as to ensure the consistency of the weighting process and the integrity of the framework. Through this study, the SRID framework of the agricultural enterprise can be used smoothly in various agricultural enterprises. It can help to understand the quality of SRID of agricultural enterprises better.

Just like the Figure 15, AHP will divide the goal of decision into several factors which contain various choices. The factors and choices are related to every aspect of the decision that contains tangible and intangible problems. All the factors will be well understood and carefully measured and they are divided into various choices that apply to the decision at hand.

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<sup>3</sup> The model is constructed by Maohua Li in the paper "Study on the SRID Evaluation Framework of Agricultural Enterprise in China" which is published by the journal "Visegrad Journal on Bioeconomy and Sustainable Development" in 2016, vol.5, issue 1, pp.36-40.



**Figure 4.** Structure of AHP

Once the structure of AHP is fixed, the decision makers only have to consider the impact of choices to factors or the impact of factors to the goal, and then evaluate all the choices and factors systematically by comparing them to each other. For instance, in the process of comparing choices, the decision makers can consider the importance of choices to its own factor and evaluate them. And the same method can be used in comparing the factors according to the impact of them on the goal.

*c. Weights of SRID evaluation framework based on AHP*

In the actual weighing process of SRID evaluation framework, we can use the relatively simple method to weight, and the main steps are as follows:

To form the comparison matrix A according to the scores of different estimators.

$$A = \begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \dots & \dots & \dots & \dots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix} \quad \text{Formula 7}$$

The product  $B_i$  of each-row elements of the comparison matrix A is calculated.

$$B_i = \prod_{j=1}^n a_{ij} \quad \text{Formula 8}$$

$i=1,2,\dots,n$

To compute the n-th root  $C_i$  of  $B_i$

$$C_i = \sqrt[n]{B_i} \quad \text{Formula 9}$$

$i=1,2,\dots,n$

To normalize the vector  $C = (C_1, C_2, \dots, C_n)^T$

$$W_i = \frac{C_i}{\sum_{i=1}^n C_i} \quad \text{Formula 10}$$

$i=1, 2, \dots, n$

$W = (W_1, W_2, \dots, W_n)^T$  is the Eigenvector that we need, and the Eigenvalues  $W_1, W_2, \dots, W_n$  are the weights of every row.

In order to ensure the correctness of the results, the consistency test is carried out. In the process of constructing the comparison matrix, the subjective consciousness of the estimators is very strong. Therefore, it is necessary to use the consistency test and consistency ratio to determine the compatibility of the weight, and to evaluate the reliability of the comparison matrix. The calculation steps are as follows:

To calculate the consistency index CI

$$\lambda_{\max} = \frac{1}{n} \sum_{i=1}^n \frac{\sum_{j=1}^n a_{ij} W_j}{W_i} \quad \text{Formula 11}$$

And

$$CI = \frac{\lambda_{\max} - n}{n - 1} \quad \text{Formula 12}$$

The largest Eigenvalue is called the principal Eigenvalue and  $\lambda_{\max}$  is the largest Eigenvalue of the comparison matrix, and n is orders of the comparison matrix  $A = (a_{ij})_{n \times n}$ .

To calculate the consistency ratio CR

$$CR = \frac{CI}{RI} \quad \text{Formula 13}$$

In the formula above, RI is the average random consistency index, and its value can be obtained by looking up the related table 11. If  $CR < 0.1$ , we can accept the consistency, that is to say, the consistency test of comparison matrix is passed. If  $CR \geq 0.1$ , we should make appropriate adjustments to comparison matrix A.

**Table 11.** Random Consistency Index ( RI )

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

\*Source: Kardi Teknomo, *Analytic Hierarchy process (Ahp) Tutorial*, pp.16.

Source: [http://www.thecourse.us/5/library/AHP/AHP\\_Tutorial.pdf](http://www.thecourse.us/5/library/AHP/AHP_Tutorial.pdf)

#### 4. 3 INFLUENTIAL FACTORS OF SRID IN CHINA

The term “corporate social responsibility” became popular in the 1960s and has remained a

term used indiscriminately by many to cover legal and moral responsibility more narrowly construed<sup>1</sup>. Nowadays, with the development of Chinese economy, this concept has been accepted by Chinese. Especially from the beginning of the 21st century, Chinese government and companies pay more and more attention to CSR. They have made some laws and regulations on CSR and social responsibility information disclosure (SRID). This part tries to find the influential factors of SRID in China from companies themselves. As we know, external causes become operative through internal causes, but internal causes contribute to the principal aspect. As a result, we find that LA(logAsset), ROA( Return on Assets), ROE( Rate of Return on Common Stockholders' Equity), CR( Current Ratio), LR( Liability-assets Ratio), PE( P/ E ratios) are the internal factors of SRID in China. In order to look for these factors, this study uses correlation analysis and multiple variables linear regression analysis.

The development of listed companies has a positive relationship with SRID, which means the realization of the CSR relies on the development of listed companies. This also proves the theory that a company is the creator of social wealth.

#### 4.4 THE REALIZATION MECHANISM OF CSR IN CHINESE

##### LISTED COMPANIES

How to help Chinese listed companies to realize CSR is still a question for the Chinese government, listed companies, and other stakeholders. This dissertation firstly studies the realization mechanism in Chinese listed companies which contains two parts: the general realization mechanism and realization mechanism of CSR in SME.

Firstly, this part studies the realization mechanism of CSR in listed companies. This dissertation constructs a general realization mechanism for Chinese listed companies. This general realization mechanism is an SPRE framework.

Secondly, this dissertation studies the realization mechanism of CSR in SCM. As we know there are too many listed companies in China, and this dissertation cannot cover all of them, so this dissertation studies a special type of companies in China which is SME (small and medium enterprise). It is harder for SME to fulfill social responsibility by itself, so how to realize CSR is a big question for them. And this dissertation wants to study a special realization mechanism for SME to help it to realize CSR.

#### 4.5 THE APPLICATION OF CSR IN CHINESE LISTED COMPANIES

As the development of the economy, many problems occurred, such as environmental problems, food safety, health insurance, etc. On the other hand, the supply chains are becoming more and more complicated and sometimes they are overlapped. This part wants to build a new SCM model based on CSR to solve these problems. Through the method of introduction of CSR into SCM, this part finally builds a new SCM model. This model concerns the supply chain as a circle for the first time. And in this model, all the roles in the supply chain are cooperators, and they should concern the wholesome interest.

This part wants to build a new SCM model based on CSR to solve some problems caused by the traditional SCM, such as they only care about their own interest, they pay no attention to the environmental problems etc.

According to the new SCM model based on CSR, all the links will cooperate as a whole to care about the whole interests of the public, other stakeholders, and the environment. And in this situation, the link will become a circle from the straight line. All the links will be cooperators, not competitors, and they will get more stable profit internal the circle and get more competitive outside the circle. At last, the whole society will get more and more sustainable because of the circle economy based on CSR.

However, there are still many problems that we should concern about. First, there is no empirical research to support this study, and fortunately, the data is under collection. Second, more detail should be considered in the empirical research, so when the author is doing the empirical research, all these details will be reconsidered and modified.

## **5. CONCLUSION AND DISCUSSION**

In order to verify the relationship between the social responsibility and the nation's economic growth, we select 681 listed companies from China as a research sample. To reflect the economic growth of the nation, we select four traditional economic indicators such as the EVA of industry (EVA), the increasing rate of GDP (RGDP), the increasing rate of investment in the fixed assets (ATR) and the increasing rate of per capita disposable income (PCDI). The explanatory variable is the adjusted CSR Reports Ranking (RKS) from Lingyun Company. The control variables selected are debt to total assets ratio (DTA), enterprise asset (SIZE), loss or not (LOSS), special treatment or not (ST). After correlation analysis of the social responsibility and performance of nation, this part uses SPSS 22 software to establish the regression model and to make the multiple variables linear regression analysis.

Through the independent-samples T-test, we know that there is a positive relationship between the level of CSR and economic growth which verify our hypothesis that there is a positive relationship between CSR and EG. That is to say when the level of CSR in China is higher, the economic growth is also better. However, the difference in the rest of the index is not very obvious, which also mean that there is a relationship between the CSR and the EG. In order to verify the relationship between CSR and EG further, we continue to take a linear regression analysis.

Through the correlation analysis, we get the result that CSR and EG are really correlated and there is little relation among the independent and control variables which mean the independent and control variable we selected is suitable for the linear regression analysis. In order to verify the strength and direction of the relationship between CSR and EG, we take the linear regression analysis.

Through multiple variables linear regression analysis, we find that the quality of social responsibility is positively related to the nation's economic growth. It shows that a higher quality of social responsibility can bring a more outstanding economic performance for the nation. At the same time we also find that if the quality of corporate social responsibility is lower, the economic growth is also very general. Through a T-test, we can find that the quality

of corporate social responsibility has an impact on economic growth, and this impact is not temporary, but sustainable. However, T-value (in the bracket) is not so large, the adjusted goodness of fit is not very good and R2 is generally 10%-50%. One reason for this situation is that we only select the research sample from China. So when we want to further my research, we will select more samples from other countries, which will make the results more reliable.

This part is not the first paper to talk about the relationship between macroeconomics and microeconomics, but it is the first paper to study the impact of CSR on EG in a quantitative way. In order to get the research data easier, this part selects data from China which makes the results of the research are not perfect. During the future research, we will take more samples from the rest of the world, and try our best to make more reliable results.

This part focuses on the impact of CSR on the economic growth. In fact, there are also some backward effects of economic growth on the CSR. Shuwang Yang and Nan Meng (2016) find that economic growth has a positive effect on corporate governance and corporate social responsibility information disclosure. The higher level of economic growth results in the more perfect corporate governance structure and the corporate social responsibility information disclosure is better. The positive effect of economic growth through the corporate governance on corporate social responsibility information disclosure is significant.

In order to verify the relationship between the internal control information disclosure and the performance of listed companies, we select 138 listed companies from China as samples. To reflect the performance of the listed companies, we select four traditional financial indicators such as total assets return rate (ROA), the rate of return (ROE), total assets turnover rate (ATR) and earnings per share (EPS), as explained variables of the operating status. The explanatory variable is the information disclosure assessment rating (IDAR) of a stock exchange. the control variables selected are: the number of directors of the enterprise (Board Size), independent directors scale (IndDir), debt to total assets ratio (DTA), Separation of powers (Detach) , enterprise asset (Size), loss or not (Loss), special treatment or not (ST), adjusted or not (Adjust). After correlation analysis of the internal control information disclosure and performance of listed companies, this part uses E-views 6.0 software to establish the multiple regression models and to make the regression analysis.

Through multiple regression analysis, we find that the quality of internal control information disclosure is positively related to the performance of listed companies under the same control conditions. It shows that a higher quality of internal control information disclosure can bring a more outstanding performance for the listed companies. At the same time we also find that if the quality of internal control information disclosure of listed companies is lower, the performance is also very general. Through T-test, we can find that the quality of internal control information disclosure of listed companies has an impact on their performance, and this impact is not temporary, but sustainable.

Based on the results obtained, in the case of maintaining the relatively low cost of disclosure, the quality and transparency of internal control information disclosure in listed companies are positive to the performance of listed companies. It also proves the famous signal transmission theory.

From the data and analysis above, we can get the conclusion that there is a strong relation between CSR and employee corporate identity. Salary related social responsibility is to meet the material needs of employees, and to provide satisfactory salary is the basic social

responsibility to employees. Employees also need the basic support from the company to work safely and contentedly, so to provide basic support is the CSR to get employee corporate identity. At last, every employee wants to build their own career, so to provide career development support is also very important. Further learning opportunity and promotion channel are the two key points for the career development.

This part firstly focuses on employee identity from the view of CSR. The mutual responsibility can make employee and corporate more related to each other. If corporate wants an employee to work harder with more responsibilities, corporate should consider more for employee's needs. The construction of the SRID evaluation framework based on the social responsibility report is the main research, and through the factor analysis, expert opinion method, our research verifies the scientific nature of the research results. But through the unremitting efforts of scholars in the academic circles, the research results continue to emerge, and some scholars do not agree with the results obtained by the social responsibility report. However, this does not affect the significance and value of this part. The internal management and external information users of agricultural enterprises can understand the relevant information of agricultural enterprises through the application of the ideas and results of this part.

CSR self-evaluation report is the only way that we can get the information about the SRID. Through the oral theme encoding and related analysis, we construct the SRID evaluation framework. And then during the verification of the framework, especial the questionnaire, we find that the enterprises with complete, detailed CSR self-evaluation report perform better in the progress of questionnaire. This means that the company with high-quality self-evaluation report will have a high-quality SRID. This verifies the hypothesis above.

There are many methods that can be used to construct the evaluation framework, and we choose the most mature method that is the oral theme encoding. In order to ensure the caution of our study, we take the reliability and validity test based on the frequency analysis. The SRID evaluation framework established on this basis is more scientific and accurate. Of course, the coders with different ability and understanding of the self-evaluation report will get different encoding results. Therefore, in order to ensure the accuracy of the encoding results, this study used two coders to encode at the same time.

During the process of verification of the SRID evaluation framework, two methods are used which are expert opinion method and factor analysis. Generally speaking, one method used for verification is enough. However, this part does exploratory factor analysis and confirmation factor analysis based on the expert opinion method, which reflects the scientific caution of the researcher. Through the verification of SRID framework, we not only verify the accuracy of the SRID evaluation framework but also verify the assumption that there is a positive relation between SRID and CRS self-evaluation report.

In the capital market, the investors always and only use the CSR self-evaluation report to read the situation of the SRID, and then to judge the fulfillment of the CSR. During this case, the quality of SRID is not related to the interest of the investors but also relates all the stakeholders' interest in the society. Among these (enterprises, investors, and stakeholders), the SRID plays a very important role as the media for information transmission. So this part has a great significance in the capital market.

There are still many problems with the SRID evaluation framework, such as how to use this framework to evaluate the real enterprise? What is the weight of each item? These questions

are the directions of our following research. For instance, the next paper will use AHP method to weight all the items of the SRID evaluation framework which will make our evaluation framework more useful and practical. Because of the limit of author's energy and paper's length, we cannot finish all possibilities in one work.

By trying to use the AHP method, this part gives the weight of each evaluation item in the SRID evaluation framework of agricultural enterprise, so as to ensure the application of the SRID evaluation framework in agricultural enterprises and the integrity of the framework. Through the application of the evaluation framework based on the AHP method, we can get more accurate, objective and convincing results from the evaluation of social responsibility information disclosure.

And the evaluation framework mixes the advantages of expert opinion method, the fuzzy comprehensive evaluation method, and the AHP method, so we get a more objective and comprehensive result than the previous single evaluation methods. On the basis of the comprehensive evaluation framework to evaluate the SRID, we can find their own problems and find the technique to solve them. So through the evaluation framework based on the AHP method, we can evaluate the SRID correctly and tell the quality of SRID of agricultural enterprises.

In Hungary, this part only focuses on related research of CSR, SRID and the evaluation of SRID in English. In the future research, we will extend our research in Hungarian with local scholars. This part wants to build a new SCM model based on CSR to solve some problems caused by the traditional SCM, such as they only care about their own interest, they pay no attention to the environmental problems etc.

According to the new SCM model based on CSR, all the links will cooperate as a wholesome to care about the whole interests of the public, other stakeholders, and the environment. And in this situation, the link will become a circle from the straight line. All the links will be cooperators, not competitors, and they will get more stable profit internal the circle and get more competitive outside the circle. At last, the whole society will get more and more sustainable because of the circle economy based on CSR.

However, there are still many problems that we should concern about. First, there is no empirical research to support this study, and fortunately, the data is under collection. Second, more detail should be considered in the empirical research, so when the author is doing the empirical research, all these details will be reconsidered and modified.

## List of publications

### *Articles in the foreign language*

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