The Sustainable Development of Green Human Resource Management in Jiangxi of China

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Abstract. Currently, people in the whole world have recognized the necessity of sustainable development, and how to practice it takes more and more attention of scholars both home and abroad. The concept of Green is addressed in every area. But Green Human Resource Management (GHRM) is not a common concept in management practices at present in Jiangxi of China. Most of the Human Resource managers in Jiangxi are not aware of this concept and those who have heard about this concept do not have much clear concern of GHRM. This paper analyses the influencing factors of GHRM in Jiangxi. The data obtains from the questionnaire survey and is sorted out by spss23.0 and Amos21.0 software. The result is that enterprises of Jiangxi in the third-tier cities need to change the concept of leaders to implement green human resource management and pay more fines to the government in the short term.

Keywords. Influence factors, green human resource management, China, Jiangxi

1. Introduction

In China, on February 28, 2015, Chai Jing, the former host of CCTV, released a public documentary under the dome. She visited and photographed a number of pollution sites to find out the causes of haze, and addressed lots of pollution control experience in other countries. It had caused fierce quarrels and had got mixed notices among the Chinese at home. On the positive side, it has attracted the attention of Chinese people to care about environmental protection. How to achieve a harmonious and sustainable development of the environment, and how to promote China's next development? The concept of green will inevitably be introduced into various management fields.

Green marketing, Green accounting, Green retailing, and Green management in general have been put forward one by one. One scholar discussed the relationship between environmental management and human resource management in his book of green people: human resources and environmental management.[1] By 2009, at the British management annual meeting, the concept of "resource management" has been included in the agenda, and green human resource management has officially emerged.

No matter from the development of macro-economy or from the operation of micro enterprises, "human resources" plays an important role. Nowadays, the world is constantly promoting sustainable economic development and green growth. Some authors had investigated in the Oil Industry in Iran. They thought the most important barriers are the lack of a comprehensive plan to implement green HRM and ambiguous of green values. But, the lowest importance is the staff resistance.[2] Others used qualitative research methods to analyze the similarities and differences in Green HRM approaches in these three European subsidiaries of a US restaurant chain, which enables the comparison of Green HRM practices and behaviors, and considers the factors that influence the subsidiaries in this particular domain.[3]
China has a quarter of the world's population. How to put into implementation of Green Human Resource Management is very important. It is the theoretical and practical significance for enterprises to carry out "green manufacturing" and promote the overall economic transformation. It is a feasible method to study from the relatively underdeveloped Jiangxi Province (the following abbreviations are JX) and start with the implementation elements of GHRM.

2. Literature review
We use “green human resource management” (the following abbreviations are GHRM) as the key word to search in Web of Science and CNKI (China National Knowledge Internet), then study the obtained literatures, which can be roughly divided into three categories:

2.1. The importance of GHRM
Before 2005, relevant literature of green human resource management is basically explaining the important role of green human resource management in the implementation and sustainable development of enterprise management.

From the perspective of environmental management, Most of researchers emphasized the importance of linking environmental management and human resource management, and believed that green human resource management measures are conducive to the sustainable development of enterprises.

Based on an ecological perspective, scholars thought green human resource management measures that were consistent with the overall environmental development strategy of enterprises, which can promote the sustainable development of enterprises.

Thus, a new research field has been formed, namely "green human resource management", with a view to promoting the sustainable development of enterprises.

In China, Wei believed that green human resource management had a certain impact on the "human state" and "mentality" of employees, which more reflected the "harmonious" concept emphasized by the culture of people abroad.[4] Wan based on the theory of AMO and pushed forward the preliminary framework of green human resource management implementation in the Chinese context, and addressed the development roadmap of green human resource management in China from three levels of macro, meso and micro.[5]

2.2. The dimensions and measurements of GHRM
As we know GHRM is very important, then how to measure it. At present, many scholars have put forward many available measurement scales.

Let's take a look at several views of these authors. Through the survey, they divided green human resource management into three dimensions: environmental performance, environmental management and executive compensation;[6] The scholar explained how high human resource management practice can be impacted from citizenship behavior through three dimensions: human resource management practice, citizenship behavior and enterprise performance;[7] Pascal proposed a questionnaire including 28 questions, finally concluded four dimensions: strategic human resource management, internal environmental issues, organizational citizenship behavior of environment and environmental performance;[8] Chen constructed seven dimensions on the basis of predecessors: market orientation, environmental strategy, environmental product quality, environmental participation of employees, environmental commitment, environmental performance and financial performance. He connected market orientation with environmental performance and built a green human resource management model based on the natural resource concept;[9] Marco used the measurement scale that based on the scale of previous studies. Then he adopted a six-point measurement method (1 = not implemented, 6 = fully implemented). Therefore, he got the results that green human resource management practice should
be divided into five dimensions: Green recruitment, green training, employee participation, green performance management and compensation.\[10,11\] Tang et al. developed a GHRM scale in the context of China, which consists of five constructs, namely, GRS, GT, GPM, GPR, and GI.\[12\] Shah revealed seven dimensions of the GHRM practice: GJD, GRS, GTD, GPM, GCM, GHS, and GLR.\[13\]

2.3. The practice of GHRM in Enterprises
From the first scale in 2007, After 2008, the research of green human resource management has jumped out of the scope of pure theoretical concept, adding "green" elements in the modules of human resource management about recruitment, training, performance, compensation and welfare, and it was carried out into enterprise practice research.

Many researchers consider that enterprises adopted the green human resource management in all its functions, which could raise the performance of environmental management.

But, some people only demonstrate one or two functions to adopt green human resource management measures, which can also be conducive to improve the performance of enterprises. For example, some pay attention to recruitment and retention, some pay attention to training and motivation.

From the perspective of employee participation, Gayathri and karthikeyan discussed that through employees' participation in energy-saving, efficient and low-cost activities in GHRM, employees' loyalty and engagement can be improved, and Organizations can arrive theirs environmental management objectives.\[14\] Roy and Therin conducted a survey of 136 small and medium-sized manufacturing enterprises in Canada, and found that employees with good training and learning can maximize environmental awareness and reduce pollution.\[15\] In India, Mishra's research on state-owned enterprises shows that employee participation and employee awareness can make the environmental performance of enterprises reach the standard. He addressed this research as a best case in India.\[16\] In China, Chen studied how employees' positive work emotions in environmental protection can improve their green behaviors.\[17\]

3. Research methodology and Model of others

3.1 Research methodology
Combining with the definition of green human resource management by Chinese and foreign scholars, this paper defines GHRM: through the coordinated development of resources, environment, economy and society, finally human and nature can achieve the harmonious coexistence as the same as human and society, then enterprises will form a sustainable economic growth model.

From the Chinese and foreign measurement scales have been explained one by one in the literature review, so it will not be repeated here. As we known, there is not very mature GHRM scale at present. After comprehensive consideration, this article will adopt 17 elements as the main research content of the implementation of green human resource management. The factors are listed in the table1.

| Order | Name of Factors | Abb. |
|-------|----------------|------|
|       |                |      |

Table1. the factors of GHRM
1 government supervision GSn
2 Enterprise economic benefits EEB
3 government punishment GP
4 stakeholder supervision SS
5 enterprise size ES
6 government subsidies GSs
7 employee capacity EC
8 enterprise type ET
9 green enterprise culture GEC
10 green employee reward GER
11 industry competition IC
12 leader value LV
13 customer demand CD
14 ISO1400 certification ISO
15 social supervision SSn
16 political interests PI
17 laws and regulations LR

Also, this questionnaire is consisted of the basic information, which including the gender, age range, education background, enterprise attribute, industry type, job level and staff number.

The questionnaire uses the five points. 1 point indicates the least influence and 5 points indicates the most influence.

This thesis apply Spss23.0 software. Spss23.0 analysis preliminary influencing factors, and tests the reliability and validity of the total scale and each influencing factor scale. Through cross analysis, whether different levels, genders or occupations have different cognition on the implementation of green human resource management. With these results, we maybe find in Jiang xi, which would be different from other provinces, then we could conclude the implementation measures of green human resource management.

3.2 the Model of others
In order to find out the development of the development in JX. We assume 17 elements as factors. we would adopt other researchers way and make them into four classes. Then we could check it in our analyses whether other’s result is the same as ours.

Figure1. the model of implementation of GHRM of others

4. Data analysis

4.1 Sample characteristic analyses
Through WeChat, this questionnaire was distributed to families, friends and enterprise working
groups. We got 186 samples, deleted 16 invalid samples and left 170 valid samples. An effective
recovery rate is 91.4%.

We get the gender ratio, the proportion of men and women is not much different; the age is mainly over
36 years old; the education level is mainly a Bachelor degree; the proportion of managers and general
employees is basically 1:1; These people are half from state-owned enterprises and half from private
enterprises. In terms of Chinese Industry Type, all types are a few people. The top four is Education,
Manufacturing industry, Residential services, repair and others ; Culture, sports and entertainment.

4.2. Descriptive statistics analyses
In addition to the basic information such as gender, age, education level, etc., the author also makes
descriptive statistical analysis on 17 influencing factors of green human resource management
implementation in the scale, including sample number, minimum value, maximum value, mean value
and standard deviation. The biggest average of 17 factors is leader value, which is 4.03; the least is
Enterprise size, which is 3.23.

According to the statistics of spss23.0, we can extract the influencing factors scores more than 3.5 are
thirteen and listed: leader value, laws and regulations, customer demand, government punishment,
enterprise economic benefits, stakeholder supervision, green employee reward, government subsidies,
green enterprise culture, ISO1400certification, government supervision, employee capacity, industry
competition. There are four factors scores lower than 3.5, including of political interests, social
supervision, enterprise type, and enterprise size. These factors scores are no big difference, So it is not
considered to exclude the influencing factor index item temporarily.

4.3. Descriptive statistics analyses
Before the exploratory factor analysis, the author first analysed the reliability and validity of the
questionnaire. Based on the calculation results of SPSS 23.2, it can be seen that the Alpha Cronbach’s
coefficient of the questionnaire data is 0.903, showing that the reliability of the data obtained by the
questionnaire is very good.

4.4 Exploratory factor analyses
In order to further explore whether there is a certain correlation between the 17 variables in the
questionnaire. This paper makes an exploratory factor analysis on the data of the questionnaire to extract
the hidden representative factors and classify the variables with the same nature into one dimension. In
this way, we can avoid the problem of collinearity among the original variables in the questionnaire,
reduce the number of variables, and facilitate the model based on the game theory.

The main purpose of this factor analysis is to find out the influencing factors that affect the
implementation of green human resource management through exploratory factor analysis, and then use
common factors extracted from factor analysis to replace the original variables for further analysis.

According to previous research experience, the proportion between the number of samples and the
number of variables should be more than 5:1, and the number of samples should not be less than 100,
and the larger the better. The total number of effective questionnaires issued by the network is 170, and
the number of variables in the questionnaire is 17. Therefore, the number of samples is relatively ideal
in this research.

4.4.1 Feasibility of factor analysis. We should first analyse the correlation between the variables in
the questionnaire before exploratory factor analysis. Only when the correlation between the variables is high, the next step of factor analysis can be carried out. In this paper, KMO sample measure and Bartlett's sphericity test are used to determine the correlation between the variables in the questionnaire.

The calculation results of 17 factors are shown in Table 4. The KMO sample measurement value of this questionnaire is 0.862. This questionnaire is suitable for exploratory factor analysis. Bartlett's sphericity test value is 883.417, and its sign value is. 000 < 0.01, so there is a certain correlation between variables. Because the questionnaire's KMO sample measurement value is 0.862, so the data can be used for exploratory factor analysis.

4.4.2 Factor extraction analysis. From the above, factor analysis can be going on. After running out factor extraction analysis, we left 13 factors. Through the factor extraction analysis, there are three components with initial eigenvalue greater than 1. we can known from the scree plot, which one factor is greater than 5, two factors are greater than 1, and the others are less than 1 from the fourth. That is to say, three factors should be extracted in this factor analysis, and the total variance of these 3 factors is the total percent of 61.934%. Combining with descriptive statistics analysis of influencing factors in implementation of green human resource management and the results of SPSS 23.0 factor extraction analysis, the author chooses the rules to delete three factors to run again. Therefore, we can get the new data and show them on Table 2.

**Table 2.** factor extraction analysis

| component | Total | Variance % | Cumulative Variance % | Total | Variance % | Cumulative Variance % |
|-----------|-------|------------|------------------------|-------|------------|------------------------|
| 1         | 5.375 | 41.347     | 41.347                 | 2.933 | 22.563     | 22.563                 |
| 2         | 1.538 | 11.828     | 53.176                 | 2.807 | 21.591     | 44.154                 |
| 3         | 1.139 | 8.758      | 61.934                 | 2.311 | 17.78      | 61.934                 |

4.4.3 Naming of factors. Based on the exploratory factor analysis and the results of spss23.0, after removing the four indicators of policy subsidies, employee capacity, customer demand, and political interest, the remaining 13 indicators were further analyzed. After five standardized orthogonal rotations, three influencing factors were extracted by principal component analysis. According to the significance of each factor, the author named three influencing factors in turn.

The first name is Power and Benefit, which are formed of government supervision, enterprise economic benefits, government punishment, and leader value. (the abbreviated name: Power & Benefit)

The second name is the internal and external environment of implementation of green human resource management. There are green enterprise culture, green employee reward, ISO14001 certification, law and regulations, and social supervision. (the abbreviated name: Environment)

The third name is the characteristics of the enterprise. The left are stakeholder supervision, enterprise scale, enterprise type and industry competition. (the abbreviated name: Enterprise)

4.4.4 Correlation of dimensions. The author uses Pearson correlation coefficient bilateral to test the correlation among the three influencing factors obtained from the exploratory factor analyses. On the basis of the calculation results of spss23.0, the three dimensions are highly correlated. In general, the validity of the questionnaire is acceptable. The calculation results are shown in Table 3.
Table 3. Correlation of main components

|                      | Power and benefit | Environment | Enterprise |
|----------------------|------------------|-------------|------------|
| Power and benefit    | PC 1             |             |            |
| Sig.                 | .561**           | 1           |            |
| Environment          | PC .431**        | .566**      | 1          |
| Sig.                 | .000             | .000        |            |

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

The total reliability of the questionnaire is 0.903, which means that the reliability of the questionnaire is very good. After the three influencing factors of GHRM are obtained through exploratory factor analysis, the author analyzes the reliability of the three factors subscale, and concludes that the cronbacha coefficients of the three subscales are all above 0.750. The data shows that the reliability of the test results is very good wether the total table or the subscale. (see Table 4).

Table 4. Reliability Statistics

|                      | Power & benefit | Environment | Enterprise |
|----------------------|-----------------|-------------|------------|
| Cronbach's Alpha     | 0.903           | 0.798       | 0.823      | 0.752      |

4.4.5 Exploratory factor analysis results model. After the above exploratory factor analysis, the remaining 13 indicators are statistically analysed, and the model of three major influencing factors affecting the implementation of green human resource management is obtained by Amos21.0, as showed in Figure 2.
5. Discussion

5.1 Theoretical Contributions
After the above analysis, the three dimensions in the figure are the driving factors that will affect the implementation of green human resource management in Jiangxi enterprises. The results are significantly different from the dimensions that were discussed by earlier scholars. This paper presents a new name of dimensions, which can find out the difference in Jiang Xi, except the general indicator of enterprise’s characteristics.

Seeing from the first dimension of power and benefit, both managers and employees believe that the value of leaders is the key to determine whether an enterprise will implement an initial of GHRM. At the same time, from the analysis of the impact of the government on enterprises, it can be seen that the government subsidies is a deleted item, that is to say, there is no subsidy policy in Jiangxi in fact, and most of them think that the impact is small, but the punishment of the government in Jiangxi is effective at present, and enterprises are essentially concerned about economic interests.

Environment would affect on our action, which had proved by social psychologists. That is to say, in order to carry out practical scheme, we can build a feasible thinking environment of green sustainable development, and lay this in daily life and work of enterprises.

5.2 Practical Implications
This study attempts to analyse the existing models of Green HRM in Jiangxi of China. Thus this study is supposed to contribute to the field of Green HRM in practice of developed province.
First, the study will help the HR professionals in adopting and implementing Green HR strategies, then they found out GHRM in JX that maybe a far way to go.

Second, it will help the union and leaders to think substitutable developing and adopt Green HRM policies to safeguard and enhance worker health and well-being.

Third, the study is supposed to open the doors of future research in China that presented in the paper to think how to promote the leader value in remote cities of China. Finally, this study will help the HR professionals in adopting and implementing a suitable Green HRM model that implies in a typical remote city.

5.3 Limitations and Direction for Future Research

5.3.1 limitations
Considering the cognitive level, most of the participants were managers over 35 years old. However, it can be seen from the results that most participants do not understand the concept of green human resource management, which attained finally the different results. It should add the first question that should be what’s your understanding of the concept. 1 is totally incomprehensible, 5 is totally comprehensible.

5.3.2 Future research
(1) Develop the scale of green human resource management
Although, the existing literature about green human resource management scale shows valuables with a strong correlation. However, there are a few items and the content is not easy to understand. Reliability and validity are not perfectly convincing. In China, Shi divided into four dimensions and used 21 questions to investigate Oil industry enterprises in his doctoral dissertation. [18] After his study, Li changed his 21 factors into 24 and investigated into employees and manager of HRM. [19] In the future, the new scale should consider the imbalance of China's regional development. Therefore, we should pay more attention to make a new scale which is systematic, scientific, and localized.

(2) researching on Interdisciplinary and multi perspective GHRM
Green human resource management covers all levels of product design, production, marketing and organizational management, which is an integral integration of organizational management research. [20] we can make the effort to study in another perspective. For example, organizational behavior, sociology, psychology and other disciplines and new theories.

(3) Making the localization of GHRM
In this paper, the questionnaire is not further regionalized, but simply quoted and modified. There are great differences between Chinese and western social, so it is very meaningful to study on green human resource management combining with the special context factors in China. The discussion of the cross-cultural situation of green human resource management will help to deepen and improve the study of its influence mechanism, make up for the lack of the current local culture research, and provide more management enlightenment for the enterprise practice.

6. Conclusion
The author analyses the influencing factors of the implementation of green human resource management in enterprises, and through spss23.0 software, makes exploratory factor analysis on the 17 influencing factors, and concludes that the three main factors influencing the implementation of green human resource management in enterprises are as follows: the power and benefit, the internal and external environment of GHRM, the characteristics of Enterprises. In practice, we can start with these three aspects to promote the implementation of green human resource management.

From the data analysis of Jiangxi Province, the green human resource management of the third tier-city is still a long way to go. In areas where punishment is too encouraging, it would be a better way to start from the concept of leaders and the construction of a green environment atmosphere.
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