RESEARCH PAPER

# Developing GREEN Performance Metrics for Wider Firms

## Mehwish Adeeb*

**ABSTRACT**
*The purpose behind this research work is to develop a GREEN performance metrics for wider firms. The metrics for wider firms is developed by using the nine independent and one dependent variable. The nine independent variables include job position, recruitment, selection, training and development, performance assessment, rewards, team formation, organizational culture management and organizational learning management. The dependent variable is perceived performance. The instruments that are used for data collection include questionnaires and survey forms. The sample size is 200 out of which actual respondents are 150. The SPSS is used for analysis. Regression analysis, descriptive analysis and correlation are run to find the relation and impact of one variable over other and with perceived performance. Findings include the development of GREEN performance metrics for wider firms. The future studies may include the formation of green teams, employee motivation to be green, GHRM in services sector, GHRM and organizational culture management etc.*

## 1. Introduction

The topic of the research is "Developing green performance metrics for wider firms". Wider firms are the firms who are enlarged one with respect to their small business units (SBU's), branches, products or brands. Wider firms are all those companies who are dealing in more than one city/country, in more than one business etc.

The factors of performance of GHRM are identified through literature review. The factors of performance of GHMR are same as those of human resource management for a business organization. These factors include nine types of factors which affect the performance of the company. There is a difference between human resource performance factors and green human resource performance factors, as the GHRM factors of performance addresses how to work for managing the environment by using HR systems and factors of performance. Job position including the job analysis and job description should address and include the demand for qualification as well as knowledge of the environmental management. The green issues should be specified in the job description. Green jobs and green job candidates should be encouraged to employee in the organization. Green firms and all firms should recruit those candidates who are green aware. Training must address the environmental issues and also the procedures and solutions for solving these issues should be developed. Green performance indicators should include in the performance appraisal and performance management stems. Performance of the employees should be assessed according t their attainment of green goals. Employees and managers should set green goals for the betterment of their own performances as well as the performance of the organization. Reward systems of the organization should encourage the attainment of the green goals. Employee's suggestion regarding environmental management should be rewarded. Including to all these green factors the other important factor of performance is green team formation. The main purpose of green teams is to identify the green issues of the organization, public, employees and for the globe, and after that develop the solution for all those green issues.

* **Corresponding author:** *Mehwish Adeeb*
    *madeeb@uob.edu.bh*

1.   *Department of Economics & Finance, University of Bahrain, Zallaq Bahrain*

After meeting the goals of environmental management the employees of the green teams should be rewarded there should also an increase in their compensation and pay packages. It will definitely motivate the other employees of the organization towards the adoption of the green knowledge and addressing the green issues.

Organization culture should also promote the green awareness. Green HRM is much more than the corporate social responsibility of the company. The culture of the organization should promote the employee involvement in the environment management and green issues facing by the company. Than in the literature review it is also explained how an organization learning management can be green. Organizations are promoting the culture of learning. For further improvement in environmental management organization learning management must be effective and efficient one.

The survey methodology is adopted for collecting the primary data directly from all those employees who are working in the enlarged firms and also involve in environmental management activities. The sample size, methodology, instrument of research, is explained in detail in the research methodology. After collecting the primary data the performance metrics are developed for wider firms.

Matrix is a type of table or any equation in which the relation between two or more variables is explained. Same method is done for the developing green performance matrix for the wider firms.

## 2. Literature Review

In order to overcome marine environmental pollution (LT JARROD DeWitz. winter 2008-9) the organization must focus on Green activities of HRM, not only the marine pollution but also the environmental pollution collectively, caused by the different organizations and their employees. The main purpose of study is to investigate the level of greening of HRM practices, activities, organizational culture, organizational learning, and teamwork in different firms (charbel jose chiappetta jabbour 2011). To find the role of HRM in pollution prevention, the first step is to survey and draw together the HR practices of EM (environmental management) (Douglas W.S. Renwick et al 2013). One of major factors of GHRM with in green organization is employee motivation, factors that motivate an employee (Nupur Chudhary, Dr. Bharti Sharma 2012). Through the special knowledge of GHRM we have to develop the frame work to activate the field of HRM to spread its role in the concern sustainable business in a dynamic environment (Susan E. Jackson et al. 2011). Among the GHRM practices that are important and compulsory to the success of green organizations management is the training regarding environment and it comes first. Environmental training is the one of the most important technique to build up and develop the human resource and make easy, the change to a more sustainable society. (Agenda 21, 1992, Chapter 36). No doubt, the importance of environmental training came into existence since 1990's (Marshall and Mayer,1992), the real proof of this is its recent emergence. Performance management systems, training and development, employee involvement and participation, grievance and discipline, green jobs, compensation and pay, performance related pay, recognition and reward (Gill Mandip 2012) are other important factors of Environmental sustainability. Large firms usually comprised of more than 250 people.

Haden et al. (2009) said "environmental management can be understood as the organization-wide process of applying innovative techniques to achieve sustainability, reduction of waste, social responsibility and gaining of competitive edge b continuous learning and development and gaining the environmental goals and strategies that are completely aligned with the organizational goals and strategies". HR metrics are important way to quantify the expenses and the impact of employee programs and HR processes and evaluate the success of HR initiatives. The HR metrics makes a company to track year to year trends, changes and patterns on the bases of critical variables. The HR metrics enables a company to evaluate the time and money that is expensed on HR activities in the organization. The different type of HR metrics are recruiting metrics, retention metrics, training and development metrics, EI metrics, EM and HR goals attainment and staffing metrics. The wider firms spend a lot on developing the HR metrics. HR metrics for a wider firm involves environmental friendly HR activities that have a result of greater efficiencies, lower cost, better employee engagement, employee retention that directly and indirectly will affect and reduce the employee carbon prints by adopting following steps like electronic filling, sharing of car and job, teleconferencing, online

interviews, recycling and reduction of waste, telecommuting, online training and tutorials, energy efficient office space, infrastructure, open and lightened offices etc.

## 2.1. Importance of GHRM

A green employer makes his employees green and makes them engage in environmental management activities. The adoption of green activities gives the company a competitive edge and advantage.

## 2.2. Research gaps

On the basis of literature review following research gaps have been identified.
1. Each organization in Pakistan is facing EM issues
2. There must be a solution to measure the POP through GHRM performance factors
3. Performance of the organization should be
5.

increased by the use of Human Resource of the organization in EM activities

## 2.3. Problem statement

The problem statement is "To empirically investigate the impact of GHRM performance factors on POP in wider firms and than to develop the GHRM Performance Matrix"

## 2.4. Research objective

The specific objectives of the research are:-
1. To check the impact of each of the factors of GHRM on perceived organizational performance
2. To find what are the outcomes of Green firms
3. To develop green performance matrix for the wider firms
4. Outline the avenues for the future study
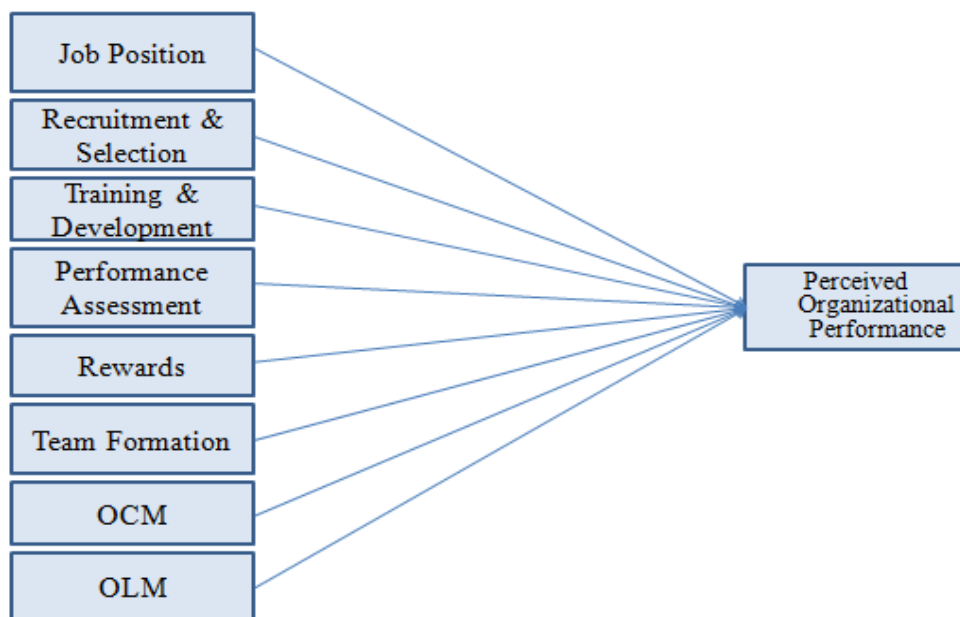
## 2.5. Conceptual model



**Fig. 1. Conceptual model**

## 2.6. Hypothesis

By looking at the literatures, this research consists the following hypotheses
- H0jp: There is a no significant relation between green job position and perceived organizational performance.
- H1jp: There is a significant relation between green job position and perceived organizational performance.
  HoR: There is no significant relation between green recruitment / selection and perceived organizational performance.

- H1R: there is a significant relationship between green recruitment & selection and POP.
- HoT: There is no significant relationship between the greentraining and development and perceived organizational performance.
- H1T: there is a significant relationship between green T&D and POP
- HoPA: There is no significant relation between green performance assessment and perceived organizational performance
- H1PA: There is a significant relation

between green performance assessment and perceived organizational performance

- HoRD: There is no significant relation between green reward and perceived organizational performance
- H1RD: There is a significant relation between green reward and perceived organizational performance
- HoTF: There is no significant relationship between green teamwork and perceived organizational performance.
- H1TF: There is a significant relationship between green teamwork and perceived organizational performance.
- Ho OCM: There is no significant relationship between green organization culture management and perceived organizational performance
- H1OCM: There is a significant relationship between green organization culture management and perceived organizational performance
- Ho OLM: There is no significant relationship between green organization learning management and perceived organizational performance
- H1OLM: There is a significant relationship between organization learning management and perceived organizational performance
- 

## 3. Methodology

Purpose of the study is explanatory. Mainly quantitative research has been used. The sample size is 148 totals of 60% respondents are there. Convenient sampling technique has been used. The research instruments are sent by email and by other mailing services to two of the banks in Lahore and same banks in Gujranwala Pakistan. Individuals are unit of analysis. Adaptive questionnaire has been used for the collection of data. Based on the literature review a five-point rating scale questionnaire ranging from 1= "strongly disagree" and 5= "strongly agree" is used. It is elaborated and responded by

environmental mangers of all those wider firms. It is consisted of 23 questions about the factors of performance of GHRM. Organizational performance is measured by using items developed by Lee and Lee (2007) with minor wording changes tailored to the business organization in Malaysia. Seven items were rated using a multi-item method was used to increase the accuracy of measurement, and each item was based on a five point Likert scale (1) strongly disagree to (5) strongly agree. The software that is used for the analysis is SPSS 20. Respondents completed personal survey questionnaire that included questions about the basic characteristics of the respondents (age, job title, industry) items designed to assess (a) GHRM factors and (b) organization performance.

## 4. Results & Findings

The data is gathered from the entire job holding employees of the different type of services providing wider firms. The analysis of the data is done in SPSS using different type of statistical tools e.g. regression analysis for showing the impact of one variable over other and mean, significance, standard deviation and correlation are also found as u can see the values of mean, std. deviation in the table which is collectively called as descriptive statistics. In the table the coding is done for each of the variable POP is showing perceived organizational performance, ADJP is for job description and job analysis, RI is for recruitment and S for selection, T for training, PA for performance appraisal, RD for rewards, TF is elaborating team formation, OCM for organizational culture management and OLM is describing organizational learning management. The value of the mean and standard deviation are described in the following table where N is showing the number of observations.

### 4.1. Scale reliability analysis

| Variables | Cranbch's Alpha | N of Items |
|---|---|---|
| ADJP | .819 | 3 |
| R | .680 | 2 |
| S | .558 | 2 |
| T | .822 | 3 |
| PA | .789 | 3 |
| RD | .800 | 2 |
| TF | .497 | 2 |
| OCM | .802 | 3 |
| OLM | .641 | 3 |

| POP | .800 | 7 |
|-----|------|---|

As the value of Cranbach Alpha is neat to 0.7 or greater than 0.7 it means the scale is reliable.

## 4.2.     Descriptive statistics

|      | Mean | Std. Deviation | N |
|------|------|----------------|---|
| POP  | 22.4649 | 3.72987 | 148 |
| ADJP | 7.4514  | 2.32562 | 148 |
| RI   | 4.3635  | 1.38506 | 148 |
| S    | 3.2473  | 1.24088 | 148 |
| T    | 7.3270  | 2.41843 | 148 |
| PA   | 6.4838  | 2.06757 | 148 |
| RD   | 3.6905  | 1.52589 | 148 |
| TF   | 3.3905  | 1.25201 | 148 |
| OCM  | 7.5635  | 2.32842 | 148 |
| OLM  | 6.8581  | 2.03390 | 148 |

## 4.3.     Factor analysis

| Variables | Bartlett Test | KMO |
|-----------|---------------|-----|
| ADJP | .696 | 0.619 |
| R    | .500 | 0.510 |
| S    | .500 | 0.591 |
| T    | .712 | 0.611 |
| PA   | .701 | 0.691 |
| RD   | .500 | 0.500 |
| TF   | .500 | 0.500 |
| OCM  | .679 | 0.590 |
| OLM  | .518 | 0.518 |
| POP  | .616 | 0.610 |

For factor analysis two of the assumptions have applied the KMO value and Bartlet Test, and all of the values are significant.

## 4.4.     Model summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|-------|---|----------|-------------------|----------------------------|-------------------|---|---|---|---|
|       |   |          |                   |                            | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .761[a] | .579 | .551 | 1.38476 | .579 | 21.079 | 9 | 138 | .000 |

The value of R square is 0.579 or 57.9 %, it means 57.9 % data is fit according to the model and remaining 42.1 % can variate.

## 4.5.     Regression matrix

| Variables | Constant | ADJP | RI | S | T | PA | RD | TF | OCM | OLM |
|-----------|----------|------|----|----|----|----|----|----|-----|-----|
| B value | 20.526 | .355 | -.405 | .645 | -.665 | .239 | -.018 | .838 | .059 | -.136 |
| t-value | 15.542 | 1.663 | 1.108 | 1.982 | 3.973 | 1.136 | -.062 | 3.011 | .396 | -.670 |
| p-value | .000 | .099 | .270 | .049 | .000 | .258 | .951 | .003 | .692 | .504 |

Regression is applied to analyze the data the descriptive statistics are described above while the correlation among the variables is shown in the below table.

## 4.6.     Correlations

|  | **POP** | **ADJP** | **RI** | **S** | **T** | **PA** | **RD** | **TF** | **OCM** | **OLM** |
|--|---------|----------|--------|-------|-------|--------|--------|--------|---------|---------|

| | | POP | ADJP | RI | S | T | PA | RD | TF | OCM | OLM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pearson Correlation | POP | 1.000 | .148 | .093 | .222 | .143 | .132 | .112 | .201 | .024 | .006 |
| | ADJP | .148 | 1.000 | .765 | .552 | .459 | .518 | .536 | .299 | .394 | .571 |
| | RI | .093 | .765 | 1.000 | .492 | .484 | .597 | .612 | .431 | .411 | .454 |
| | S | .222 | .552 | .492 | 1.000 | .379 | .581 | .593 | .278 | .188 | .464 |
| | T | .143 | .459 | .484 | .379 | 1.000 | .600 | .505 | .441 | .477 | .531 |
| | PA | .132 | .518 | .597 | .581 | .600 | 1.000 | .585 | .468 | .347 | .433 |
| | RD | .112 | .536 | .612 | .593 | .505 | .585 | 1.000 | .478 | .383 | .586 |
| | TF | .201 | .299 | .431 | .278 | .441 | .468 | .478 | 1.000 | .251 | .247 |
| | OCM | .024 | .394 | .411 | .188 | .477 | .347 | .383 | .251 | 1.000 | .464 |
| | OLM | .006 | .571 | .454 | .464 | .531 | .433 | .586 | .247 | .464 | 1.000 |
| Sig. (1-tailed) | POP | . | .037 | .129 | .003 | .041 | .055 | .089 | .007 | .387 | .472 |
| | ADJP | .037 | . | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | RI | .129 | .000 | . | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | S | .003 | .000 | .000 | . | .000 | .000 | .000 | .000 | .011 | .000 |
| | T | .041 | .000 | .000 | .000 | . | .000 | .000 | .000 | .000 | .000 |
| | PA | .055 | .000 | .000 | .000 | .000 | . | .000 | .000 | .000 | .000 |
| | RD | .089 | .000 | .000 | .000 | .000 | .000 | . | .000 | .000 | .000 |
| | TF | .007 | .000 | .000 | .000 | .000 | .000 | .000 | . | .001 | .001 |
| | OCM | .387 | .000 | .000 | .011 | .000 | .000 | .000 | .001 | . | .000 |
| | OLM | .472 | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .000 | . |
| N | POP | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | ADJP | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | RI | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | S | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | T | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | PA | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | RD | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | TF | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | OCM | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | OLM | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |

It is described in the table that each of the variable is positively correlated with each other and with POP.

## 4.7. Regression equation

Where, a is intercept and b1 to b9 are the slope parameters

**POP = a + b₁ ADJP + b₂ R + b₃ S + b₄ T + b₅ PA + b₆ RD + b₇ TF + b₈ OCM + b₉ OLM**

On the bases of the following findings a performance metrics is developed for the wider firms. That is given below. In the given metrics the y-axis is describing the POP while the x-axis is consisted of performance factors of GHRM system. As all of them are used in performance evaluation and play a major role with the greening of each of the factor of performance of GHRM system the organization performance increases where the horizontal line parallel to x-axis is showing green organizations who have following the green factors or green activities. After having a competitive edge of these entire GHRM factor these organization can be known as green Organizations and before that they can be categorized as golden firms. With the greening of each of the activity of HR system the organization are turning to green organizations from gold organizations.

## 4.8. GHRM factors of performance

This metrics is showing that higher the greening of each of the factor of performance of the organization than the higher will be the perceived organizational performance.

## 4.9. Future scope

As the topic of green human resource management is new to everyone in Pakistan so there is a great need and great opportunity for the researchers to work on it. Many of the employees working in wider firms don't have a basic knowledge about green HRM. The future avenues of GHRM include the following field and topics to work on.

- Motivation and GHRM
- Green team formation
- GHRM in service sector
- GHRM and small firms
- Turning of gold firms into green firms

## 5. Limitations

The main hurdle in research work is mainly the selection of a suitable topic relevant to the interest of the researcher, knowledge of the researcher about the research work how to conduct a research and then the stage of data collection comes. The data collection is a main basic hurdle in data collection respondents don't response timely or give unbiased feedback. People should know the importance of research so that time data collection can be possible.

## 6. Conclusion

The perceived organization performance can be increase by making the organizations green. The organization can be made green by implementing the green factors of performance so that the firms can play their role in managing the environment.

## References

[1] Today's Success Mantra-Going Green at functional Areas of HRM, Dr. Harjoth Kaur.

[2] Gill Mandip (2012). Green HRM: people management commitment to environment sustainability. Research journal of recent sciences Vol 1. (ISC 2011), (2012), pp. 244-252.

[3] LT jarrod D Bitz. Going green reaps awards.US coast Guard headquarters office of vessel activities. Winter (2008-2009).

[4] Charbeel Jose and CHipatea jabbour. How green are HRM practices, organizational culture, learning and team work? A brazillian study. Vol. 43, No. 2, (2011), pp. 98-105 Emerald group publishing ltd ISSN 0019-7858.

[5] Douglas W.S. Renwick, Tom Redman and Stuart Maguire Green Human Resource Management: a review and research agenda*. International Journal of management review Vol. 15, (2013), pp. 1-14.

[6] Adriano Alves Teixeria, Charbel Joes Chipeatta Jabbor, Ana Beitrizz Lopes de Suasa Jabbor Relationship between green management and environmental training in companies located in Brazil: a theoretical framework and case study. Int.j.production economics Vol. 140, (2012), pp. 318-319.

[7] Susan E. Jackson, Douglas W.E. Renwick, Charbbel J.C. Jabbour. Michel Muller

Camen. State of the art and future directions for green human resource management: introduction to special issue. Zeitschrift für Personalforschung, Vol. 25, No. 2, pp. 99-116.

Doi                  10.1688/1862-0000_ZfP_2011_02_Jackson 101.

[8]  The two key factors that Affect HRM roles and Responsibilities by Lisa McQuerrey, Demand Media.

[9]  Human capital development and its impact on firm performance: evidence from developmental economics by Maran MARIMUTHU, Lawrence AROKIASAMY and Maimunah ISM.

[10] Mandip, G. (2012). Green HRM: People Management Commitment to Environmental Sustainability. *Research Journal of Recent Sciences.*

[11] Sathyapriya, J., Kanimozhi, R., & Adhilakshmi, V. GREEN HRM-DELIVERING HIGH PERFORMANCE HR SYSTEMS.

[12] Anderson, L., & Anderson, T. Online professional development conferences: An effective, economical and eco-friendly option. *Canadian Journal of Learning & Technology*, Vol. 35, No. 2, (2009).

[13] Davis, P. A., Brown, J. C., Saunders, M., Lanigan, G., Wright, E., Fortune, T., ... & Osborne, B. Assessing the effects of agricultural management practices on carbon fluxes: Spatial variation and the need for replicated estimates of Net Ecosystem Exchange. *Agricultural and forest meteorology*,Vol. 150, No. 4, (2010), pp. 564-574.

[14] Abu-Allaban, M., Rajab, M. J. A., al-Atiyat, M. N., Badriyah, M. M., Bakir, M. A., Buser, M. C. & Jaghbir, M. The International Conference on Environmental Performance of Tourist Accommodation Sector in Euro-Med Countries (CEPTA) July 2 nd-4 th, , Mövenpick Hotel, Petra, Jordan, (2008).

[15] Sathyapriya, J., Kanimozhi, R., & Adhilakshmi, V. GREEN HRM-DELIVERING HIGH PERFORMANCE HR SYSTEMS.

[16] Tahere, N., Zahra, G., Fateme, D., & Asma, Y. Investigating the Effects of Job Experience, Satisfaction, and Motivation on Organizational Commitment Case Study:(The Nurses of Ghaem Hospital in Mashhad, Iran). *Research Journal of Recent Sciences,* (2012).

[17] Çalişkan, E. N. The impact of strategic human resource management on organizational performance. *Journal of Naval science and engineering*, Vol. 6, No. 2, (2010), pp. 100-116.

[18] Chandola, V. S., Sharma, N., & Gandhi, N. THE IMPACT OF STRATEGIC HUMAN RESOURCE MANAGEMENT ON ORGANIZATIONAL PERFORMANCE.

[19] Ones, D. S., & Dilchert, S. Measuring, understanding, and influencing employee green behaviors. *Green Organizations: Driving Change with IO Psychology*, Vol. 115, (2013).

[20] Jackson, S. E., & Seo, J. The greening of strategic HRM scholarship.*Organization Management Journal*, Vol. 7, No. 4, (2010), pp. 278-290.

[21] Jabbour, C. J. C., & Santos, F. C. A. The central role of human resource management in the search for sustainable organizations. *The International Journal of Human Resource Management*, Vol. 19, No. 12, (2008), pp. 2133-2154.

[22] Jabbour, C. J. C., & Santos, F. C. A. Relationships between human resource dimensions and environmental management in companies: proposal of a model. *Journal of Cleaner Production*, Vol. 16, No. 1, (2008), pp. 51-58.

[23] Jabbour, C. J. C., Jabbour, A. B. L. D. S., Govindan, K., Teixeira, A. A., & Freitas, W. R. D. S. Environmental management and operational performance in

automotive companies in Brazil: the role of human resource management and lean manufacturing. *Journal of Cleaner Production*, Vol. 47, (2013), pp. 129-140.

[24] Teixeira, A. A., Jabbour, C. J. C., & Jabbour, A. B. L. D. S. Relationship between green management and environmental training in companies located in Brazil: A theoretical framework and case studies. *International Journal of Production Economics*, Vol. 140, No. 1, (2012), pp. 318-329.

[25] Jabbour, C. J. C. How green are HRM practices, organizational culture, learning and teamwork? A Brazilian study. *Industrial and Commercial Training*, Vol. 43, No. 2, (2011), pp. 98-105.