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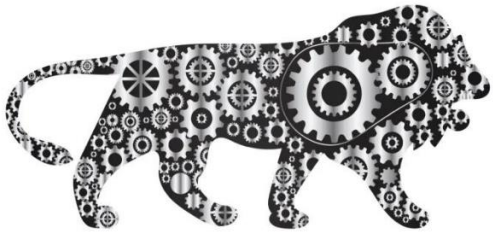

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Contents

The Effect of Green Human Resource Management Practices on Pro-environmental Behavior in Manufacturing Industry

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Abstract

Purpose: The current study aimed to examine the role of green human resource management practices in promoting pro-environmental behaviors in the manufacturing sector of Ethiopia.

Design/methodology/approach: An explanatory design with deductive approach and quantitative method was employed since it followed the positivism research paradigm. A self-administered questionnaire survey was used to collect data from 351 employees of large scale manufacturing companies in Amhara Regional State. The study employed structural equation modeling approach with AMOS 23.0 to test the hypothesized model.

Findings: The results of this investigation disclosed that green human resource management practice has a significant and positive effect on pro-environmental behaviors in large scale manufacturing companies. Besides, green recruitment and selection, performance management appraisal, training and development, reward and compensation, and empowerment have a significant and positive effect on pro-environmental behaviors.

Originality/Value: The study revealed that the green empowerment influences pro-environmental behavior strongly, which is a new contribution to the existing literature of human resource management. This dimension can provide new dimensions to design green human resource management which is based on environmental sustainability paradigm. This can strengthen the organizational capabilities aiming to increasing pro-environmental behaviors in order to have a deep˘seated environmental conservation and protection strategy.

Keywords: Green Human Resource Management; Pro-environmental Behavior; Manufacturing Industry

Introduction

The journey towards realizing sustainable growth and development is achieved if a given nation can put its optimum effort in developing and transforming the manufacturing industry (Stijns, 2005). In this twenty-first century, developing the manufacturing sector remains relevant to poor countries given the fact that it plays an insightful role for poverty reduction and sustainable economic growth (Naude & Szirmai, 2012). The same case happens in the Ethiopian context as it has been focusing on ensuring rapid, sustainable and broad-based growth through enhancing productivity of manufacturing and agriculture, improving quality of production and stimulating competition in the economy (NPC, 2016).

In this days, the only certainty is uncertainty, manufacturing industry running in these dynamic and competitive business scenarios need to have the sure source of core competencies, like greening human resource practices (Florida & Davison, 2001) as such practices become to be a means of improving green employee behavior (Paille & Boiral, 2013), and then such pro- environmental behavior can also realize social, economic and environmental performance of the manufacturing companies (Wagner, 2005). Consequently, organizations need to create encouraging environments for managing economic and environmental performances, looking the dynamic situations through having environmental oriented values (Ferreira *et al*., 2010).

In the same vein, there is a growing awareness that many serious environmental problems threatening the planet is, at least to some extent, associated with the human actions (Nordlund & Garvill, 2002). Hence, elucidating motives and determinants relating to pro-environmental behaviour is of paramount importance for changing human behaviors towards an environmentally responsible direction (Nguyen *et al*., 2016), and then companies can maintain their competitive advantages within this continuously changing business world (Szirmai & Verspagena, 2015). In an effort to do this, researchers have sought to understand the influence of various factors on pro-environmental behaviour in the manufacturing industry (Naude & Szirmai, 2012) as environmental sustainability is best applicable in this sector (Tseng *et al*., 2013).

Employees play an important role in developing the corporate greening by performing a wide range of pro-environmental behaviors (Lulfs & Hahn, 2013). This happens due to the fact that irreversible climate changes, prevalence of environmental pollution, and resource limitations have been increased at an alarming speed (Steg *et al*., 2014). Due to this, organizations around the world start to implement various pro-environmental initiatives (Zibarras & Coan, 2015).

Regardless of the growing interest in studying environmental management and its potential benefits to industry success, few studies have examined the antecedents of employees' pro- environmental behaviors (Rehman *et al*., 2016). Thus, further scientific investigations need to be conducted pertaining to examining the different drivers of greening the behaviors of employees in the manufacturing sector (Zhan *et al*., 2016; Saeed *et al*., 2019). Despite various factors have been identified as the determinant of pro-environmental behaviour in different contexts (Rehman *et al*., 2016), determining the role of green human resource management practices in promoting employee‟s greening behavior in the manufacturing sector needs to have more scientific research (Zhan *et al*., 2016; Saeed *et al*., 2019).

The manufacturing sector is considered to be a source of various forms of environmental pollution in both developed and developing countries, which need its managerial activities to be critically assessed, monitored and rectified (Rehman *et al*., 2016). Because of the important role and effects of manufacturing sector on economic growth of nations (Szirmai & Verspagena, 2015; Marconi *et al*., 2016), there is an increasing need for adopting effective environmentally friendly practices that can mitigate environmental impacts of this vital sector. As a result, experts and academics need to invest their valuable resources in conducting scientific investigations related to environmental issues and sustainable development (Dumont *et al*., 2017). Despite the manufacturing sector becomes to be a potential source of environmental problems (Opatha & Arulrajah, 2014), authors are not giving a critical attention (Masri & Jaaron, 2017). Accordingly, further scientific investigation related to environmental issues in the manufacturing sector becomes to be worthwhile (Jabbour & Jabbour, 2016), aims to provide concepts and theories for HR managers in applying and developing GHRM for the improvement of pro-environmental behaviors.

Consequently, this paper aims to provide the below contributions in the manufacturing sector: first, the current study is helpful to understand how green human resource management practices can influence pro-environmental behaviors; second, this study helps one‟s understanding pertaining to how each dimensions of green human resource management practices can improve employee‟s greening behaviors. Accordingly, this research paper was planned to examine the role of green human resource management practices in promoting pro-environmental behaviors in the manufacturing industry.

Literature Review

Conceptual Framework

Employee's pro-environmental behavior can be defined as „willingness to engage in pro- environmental activities‟ (Scherbaum *et al*., 2008). This behavior essentially contributes to promote environmental performance (Vicente-Molina *et al*., 2013). As experts of the area clearly put that the behavior of conserving, work sustainability, avoiding harm, influencing others, and taking initiative are the manifestation of pro environmental behavior (Paille & Boiral, 2013). The participation of employees to address environmental issues and engage in pro-environmental behaviors is considered as an effective strategy to become environmentally responsible organization and enhance environmental performance (Bissing-Olson *et al*., 2012). Previous researchers have determined the different factors of employee‟s greening behavior (Rehman *et al*., 2016); including green human resource management practices in the manufacturing sector (Saeed *et al*., 2019).

Green Human Resources Management (GHRM) refers to applying the human resource management practices to reinforce environmentally sustainable practices, and increase employee‟s commitment on the issues of environmental sustainability (Masri & Jaaron, 2017). In a very similar way, green human resource management can also be understood as HRM practices with the intention to promote environment-friendly use of resources, which will reinforce the cause of environmental performance in general, and will increase employee awareness and commitments on the issues of environmental management in particular (Tang *et al*., 2018).

Studies that consider green HRM's multidimensional nature took into account its diverse-related dimensions (Tang *et al*., 2018). Mishra (2017) asserts that green HRM is implemented throughout the HRM process of

planning, recruitment and selection, training and development, and compensation and appraisal, with an aim to maintain green objectives. The emergence of green HRM includes the extent of improving the social (i.e., work-life balance) and economic well-being (i.e., sustain profits) beside awareness toward environmental concern (i.e., reduced wastes). Renwick *et al.* (2013) suggested that recruiting and selecting, training and developing environmental knowledge, performance management and appraisal, reward and compensation, and employee empowerment are considered as the constituents of green HRM. The present study employed the Renwick *et al.*"s framework as this model has been considered as relatively feasible to measure green human resource management practices in the manufacturing industry (Masri & Jaaron, 2017).

Inherently, human irresponsible activities at work can cause environmental degradation (Ones & Dilchert, 2012). Green HRM practices are used to stimulate employees" responsible behavior to preserve the environment (Cherian & Jacob, 2012). Furthermore, Jackson and Seo (2010) asserted that companies which pay attention to the greening of human factors may be more productive, thus gaining a competitive advantage (Cherian & Jacob, 2012). The manufacturing of products with lower environmental impact requires the support of HRM (Govindarajulu & Daily, 2004). This has been asserted by Jabbour and Santos (2008) who stated that superior pro- environmental behavior outcome requires HRM practices that support the whole implementation and maintenance of environmental management systems in the given organization.

Green HRM practices result in greater efficiencies, lower costs and create an atmosphere of better employee relationship (Lulfs & Hahn, 2013; Tang *et al*., 2018), which in turn helps organizations to operate in an environmental-friendly manner (DuBois & Dubois, 2012; Zibarras & Coan, 2015). Green HRM practices, such as planning corporate environmental management initiatives/programs/activities, setting green targets, goals and responsibilities, making new employees familiar with greening efforts of the organization and encourage them to engage in green interpersonal citizenship behavior, providing regular feedback to the employees or teams to achieve environmental goals or improve their environmental performance, and creating opportunities to the employee to involve and participate in green suggestion schemes, are likely to increase employee pro-environmental cognition (Renwick et al., 2013; Saeed *et al*., 2019).

Tseng *et al.* (2013) suggest that designing jobs and work settings that encourage employees to learn about the environment and providing regular and frequent trainings about environmental management systems increase an employee's concern and motivation to engage in pro- environmental activities. Nishii *et al*. (2008) assert that employees perceive their organization's HRM practices as a determinant of their work attitudes and behaviors. Therefore, if an organization incorporates greening in its human policies, employees would display behaviors that resonate and act in accordance with the organization's green policies (Renwick *et al*., 2013; O'Donohue & Torugsa, 2016). Due to these worthwhile contributions of GHRM practices on the enhancement of pro-environmental behaviors, scholars and experts start to turn their attention to the role of greening HR practices in promoting the pro-environmental behaviors (Mishra, 2017; Tang *et al*., 2018), and this topic becomes quite critical in the manufacturing industry (Masri & Jaaron, 2017).

Although there is an increasing extent of the substantial literature about GHRM in developed countries (Jackson & Seo, 2010; Jackson *et al*., 2011; Renwick *et al*., 2013; Renwick *et al.*, 2016, Ehnert *et al.*, 2016; Jabbour & Jabbour, 2016; O'Donohue & Torugsa, 2016; Mishra, 2017; Masri & Jaaron, 2017; Tang *et al*., 2018), there is still uncertainty about what GHRM practices are needed for an effective enhancement of green employee behaviors in developing countries, and how these practices can be connected and incorporated in workplace to help the organization achieve green corporate culture and maximize environmental performance (Cherian & Jacob, 2012; Sathyapriya *et al*., 2013; Jabbar & Abid, 2014; Ahmad, 2015; Haddock-Miller *et al*., 2016); paying little attention to prioritizing and validating such practices that can operationalize activities necessary for environmental sustainability in the manufacturing industry (Masri & Jaaron, 2017).

In fact, several researchers discussed the lack of empirical studies from the manufacturing sector in the developing countries (Zhan *et al*., 2016; Rehman *et al*., 2016). The value of these studies also increases if they are carried out in a challenging environment of a developing country, like Ethiopia. However, in addition to the research gap identified earlier, the novelty of this study is twofold. First, this paper presented a first study of its kind in Ethiopia, and among very few studies exploring GHRM in the context of developing countries as Jabbar and Abid (2014), Mishra *et al.* (2014), and Bhutto and Auranzeb (2016) argued. Second, despite the major impacts of political instability and movement obstacles, Ethiopia is an active member in international agreements on environmental issues to implement that contributes to meeting international environmental

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priorities (EPA, 2010).

Thus, this study proposed the below hypotheses:

H_1: Green Recruitment and Selection (GRS) has a significant and positive effect on pro- environmental behavior (PEB).

H_2: Green Performance Management Appraisal (GPMA) has a significant and positive effect on pro-environmental behavior (PEB).

H3: Green Training and Development (GTD) has a significant and positive effect on pro- environmental behavior (PEB).

H_4: Green Reward and Compensation (GRC) has a significant and positive effect on pro- environmental behavior (PEB).

H_5: Green Empowerment (GE) has a significant and positive effect on pro-environmental behavior (PEB).

Based on above discussion, the study proposed research model as per the above empirical as well as theoretical frameworks in Figure 1.

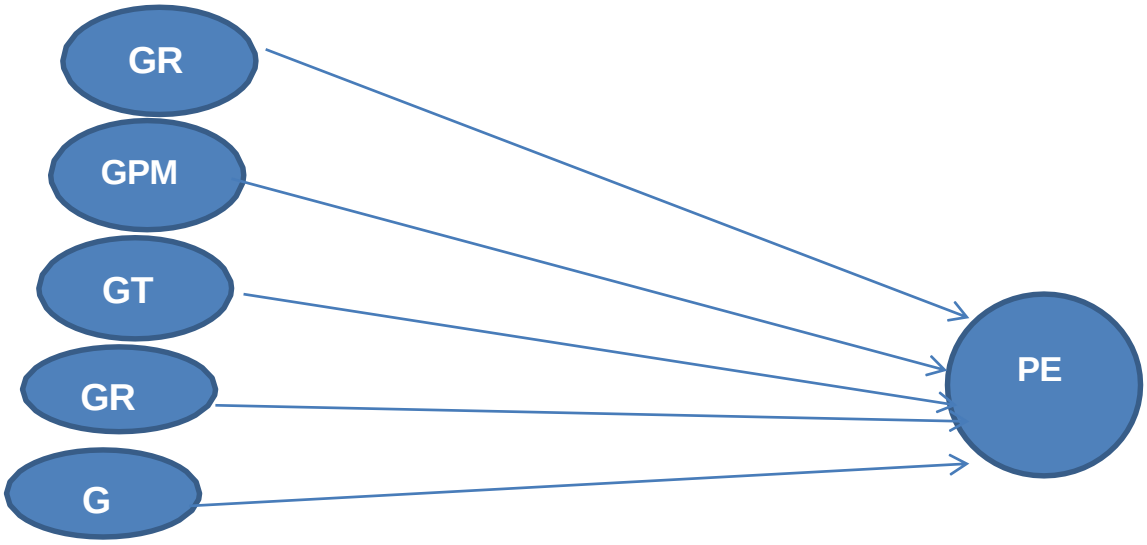

Figure 1: Conceptual Framework; Source: Compiled from Previous Literature

Methods

The study focused on examining the role of green human resource management practices in promoting pro-environmental behavior in the large manufacturing companies through survey strategy with explanatory research design. The study employed a self-administered standardized questionnaire as an instrument of data collection. All latent constructs were measured with multi- item scales with a five-point Likert scale (ranging from 1= strongly disagree to 5 = strongly agree).

Population and Sampling

The current study stratified manufacturing industry into different companies by using Stratified Sampling Technique. In Amhara regional State, manufacturing sectors were grouped in to three, namely: *Agro-processing, wood & Steel, and Textile & Leather* as per trade, industry and market office. This technique was employed due to the fact that these latent research variables (i.e., GHRM and proenvironmental behavior) are influenced by the types of sectors, and it has been argued that differences in types (like food, beverage, steel, and others) can have a significant difference on GHRM (Masri & Jaaron, 2017) and proenvironmental behavior (Nguyen *et al*., 2016). Besides, in each sector there are different companies in each group and were considered as sub-strata. Thus, the researchers employed a proportionate stratified sampling technique, and respondents were selected randomly in each stratum. In order to select the sampled respondents, simple random sampling

technique was employed, and for interview part, purposive sampling was used. The survey was conducted on 85 *Agro-processing, wood & Steel, and Textile & Leather* companies with 386 respondents, however only 351 responses were used with a response rate of 91 percent.

Co-variance based Structural Equation Modeling (CB – SEM) was applied in Analyzing Moment of Structures (AMOS) version 23.0 for data analysis. A pilot test for the research instruments with 50 initial questionnaires were distributed to employees of large scale manufacturing companies for checking reliability. The values of Cronbach‟s alpha for Green Recruitment and Selection (GRS); Green Performance Management Appraisal (GPMA), Green Training and Development (GTD), Green Reward and Compensation (GRC), Green Empowerment (GE) as a dimension of Green Human Resource Management Practices (GHRMP); and Pro-environmental Behavior (PEB) latent constructs were 0.81, 0.80, 0.88, 0.90, 0.77, and 0.66 respectively. Therefore, the scale reliability of each construct was established since all values for each latent construct exceed 0.65.

Results

Measurement Model Assessments

The demographic details of respondents used in the survey reveals that majority of respondents in terms of gender, marital status, academic qualification, work experience, and sector type were male, unmarried, BA/Bsc, less than 5 years, and agro-processing respectively. Table 1 explains the full details of large scale manufacturing companies:

Table 1: Demographic Details of Respondents (N = 351)

Characteristics	Group	N=351	
		Frequency	Percentage (%)
Gender	Male	195	55.6
	Female	156	44.4
Marital status	Single	185	52.7
	Married	144	41.0
	Divorced	22	6.3
Academic qualification	Diploma (10+3)	136	38.7
	BA/Bsc	186	53.0
	MA/Msc	29	8.3
Experience	$\leq$ 5 year	209	59.5
	6-10 years	106	30.2
	11-15 years	20	5.7
	$\geq$ 16 years	16	4.6
Sector type	Agro-processing	121	34.5
	Wood & Steel	116	33.0
	Textile & Leather	114	32.5

Source: Authors‟ Observation

Structural Equation Modeling approach was employed to test the research hypotheses. This approach is a two-stage multivariate analysis tool in which confirmatory factor analysis needs to be used in evaluating the measurement model and then the structural model proceeds (Kline, 2011). Accordingly, this study assessed its measurement model through confirmatory factor analysis a head of evaluating the structural model and testing the hypotheses.

The first step in measurement model is that evaluating the preliminary assumptions (Hair *et al*., 2010). Hair *et al*. (2010) suggested that a good model fit is maintained if the chi-square statistics is insignificant; the value of Normed X2 is less than 5.00; RMSEA values less than 0.08; the values of GFI, CFI, and TLI are greater than 0.90. Table 1 (see in the appendix) shows that X2

/DF= 8.35, RMSEA= 0.145, TLI= 0.86, CFI= 0.90, GFI= 0.91. Accordingly, the measurement model showed a better fit to the data considering all the loading items as shown in Table 2.

Table 2: Measurement Model Fit Indices

Model	X^2	df	P	X^2/df	GFI	CFI	TLI	RMSEA

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Final Model	1747.416	512	0.000	3.413	0.91	0.90	0.86	0.083

Source: Author‟s Calculation

Byrne (2009) noted that unidimensionality is assessed by using the standardized factor loading of items. Amos 23 results demonstrate that the respective loadings of items for GSR, GPMA, GTD, GRC, GE and PEB were greater than 0.60 (see fig.2). Thus, in line with the criterion value suggested by Byrne (2009), items of their respective factors were loaded satisfactory. The internal consistency of construct is evaluated through the help of composite reliability with a minimum value of 0.70 and above (Hair *et al*., 2010). Pertaining to the composite reliability, values of all constructs are greater than 0.70. Hence, the reliability of each construct is established. Hair et al. (2010) noted that convergent validity is maintained if the values of AVE and CR are more than 0.50 and 0.70 respectively. In case of the values of the average variance extracted, all study factors are more than 0.50, and composite reliabilities of constructs are also greater than 0.70. Accordingly, these values confirmed that the convergent validity of constructs is established as per authors‟ calculation In case of discriminant validity, results demonstrate that the respective Square Root value of AVE for each construct exceed all correlations between constructs (Fornell & Larcker, 1981). In addition, all correlation values between factors are less than 0.85 as per the criterion suggested by Hair *et al.* (2010). Thus, these values confirmed that the study factors are different to each other.

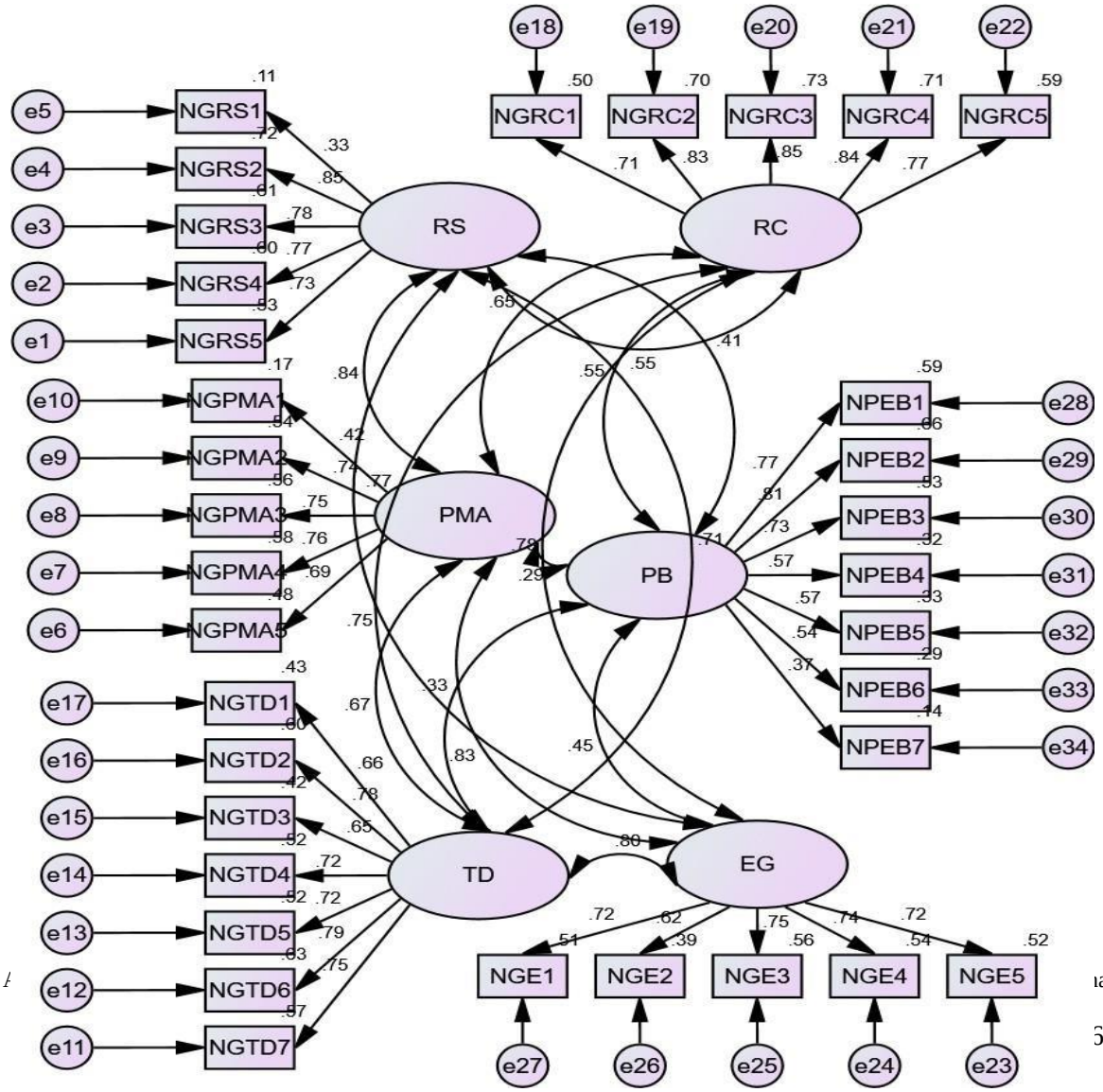

Figure 2: Measurement Model

Structural Model Assessment

Like to the measurement model, the structural model fit is also evaluated by employing the major fit indices as the criterion suggested by Hair *et al.* (2010). SEM result demonstrates that RAMSEA = 0.145, TLI= 0.86, CFI= 0.90, GFI= 0.91, X2 /DF= 8.35 and chi-square statistics is insignificant. Table 3 represents the structural model assessment of the sample data.

Table 3: Structural Model Fit Indices

Model	X^2	df	P	X^2 /df	GFI	CFI	TLI	RMSEA
Final Model	158.373	19	0.000	8.35	0.91	0.90	0.86	0.145

Source: Author‟s Calculation

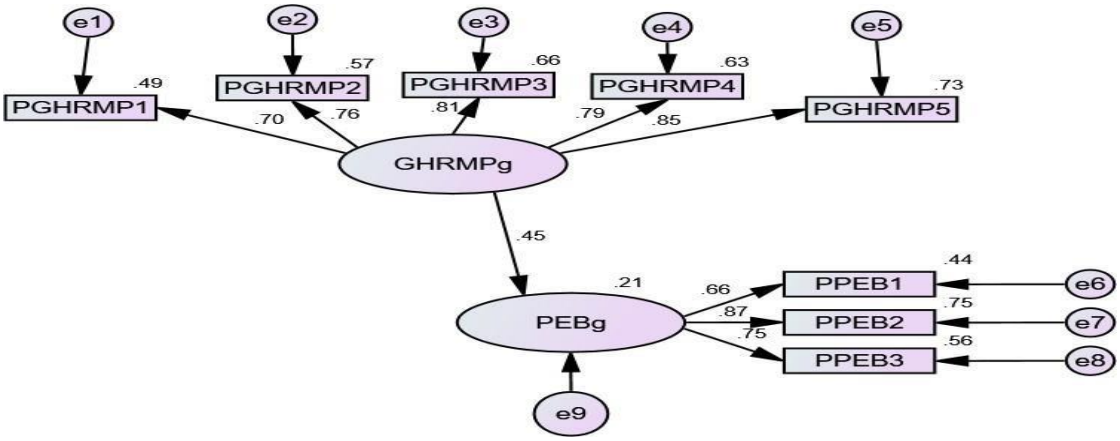

Figure 3: Structural Model

Regression Weights and Coefficient of Determination

Measuring the direct effect of green human resource management practices on proenvironmental behavior in large scale manufacturing companies was the main objective under the present study. SEM with AMOS 23.0 was employed to examine this objective. This study evaluated the model fit of this hypothesized structural model before testing the proposed hypothesis by taking the path coefficients (β), and their associated t-values or critical ratio (C.R). In this case, to consider the coefficients to be significant at $p<0.05$, a C.R value of 1.96 or more was used as the criterion suggested by Hair *et al.* (2010). Decisions related to supporting or rejecting hypothesis was done at the end as well.

This hypothesis was focused on testing the direct effects of green human resource management practices on proenvironmental behavior. Figure 3 demonstrates that green human resource management practice has a significant and positive effect on proenvironmental behavior (β=0.45, CR=6.560, P<0.001). With regard to the explaining power, green human resource management practices explained 21 percent (R^2 =0.21) of the variance in proenvironmental behavior whereas the rest 79 percent was related to other variables, which were not included in the present study.

Consequently, it was proposed that green human resource management practice has a direct and significant positive influence on proenvironmental behavior in large scale manufacturing industry. Based on the AMOS results of this study, this hypothesis was supported.

Conclusion and Implications

AMOS results show that green human resource management practice has a significant and positive correlation with proenvironmental behavior. It is concluded that the different practices of green human resource management in large scale manufacturing industry can have a significant covariance with employee‟s proenvironmental behavior.

This investigation has implications for managers in the manufacturing sector. The result of this paper offers a reasonable insight to managers in enabling them to face the challenges of a dynamic business situation. A continuously changing scenario results in intensified competition within the market. In order to be competent enough in this horrible financial market, the manufacturing industry needs to promote employee‟s greening behavior through practicing green recruitment and selection, green performance management appraisal, green training and development, green reward and compensation, and green empowerment. These greening practices, in turn, can improve the competitiveness of the manufacturing sector within terrible environments.

This study provides theoretical contributions to the existing body of knowledge at least in two ways. First, it enhances our theoretical understanding of green human resource management practices and its effect on the pro-environmental behavior in the manufacturing context. Second, this research contributed to the green human resource management literature through revealing how the different green human resource management is strengthened, which in turn promotes employee‟s greening behavior in the large scale manufacturing companies.

Limitation and Future Scope of the Study

Despite this paper contributes to the body of knowledge pertaining to the role of green human resource management practices in promoting pro-environmental behavior of employees in large scale manufacturing companies, the following limitations were identified and then, future researchers are directed. First, this study was limited to the context of developing countries in terms of geographical area, specifically in Ethiopia. As difference of culture may lead to different influences on study results (Hofstede *et al*., 2010), this finding will not be generalized to other countries. Consequently, future studies can validate this model in different nations. Second, the present study was focused on only green human resource management practices, but other related variables like employee‟s biospheric value was not included. Therefore, future studies can explore a study to examine the mediating roles of employee‟s biospheric value in linking green human resource management practices to pro-environmental behavior in the manufacturing industry.

References

Amare M. (2015). Overview of Manufacturing Industries in Ethiopia, Industrial Engineering Letters,

Ahmad, S. (2015). Green human resource management: policies and practices. *Cogent Business & Management,* 2, 1030817.

Ajzen, I. (1991). THE THEORY OF PLANNED BEHAVIOR. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Becker, B. E., & Huselid, M. A. (2006). Strategic human resources management: Where do we go from here? *Journal of Management*, *32*(6), 898–925.

Bhutto, S.A., & Auranzeb (2016). Effects of green human resources management on firm performance: an empirical study on Pakistani firms. European Journal of Business and Management. 8, 119-125.

Bissing-Olson, M. J., Zacher, H., Fielding, K. S., & Iyer, A. (2012). An intraindividual perspective on pro-environmental behavior at work. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 5, 500-502.

Bissing-Olson, M.J., Iyer, A., Fielding, K.S., & Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: the moderating role of pro-environmental attitude", *Journal of Organizational Behavior*, 34(2), 156-175.

Bryman, A. (2012). Social research methods, Oxford, New York, Oxford University Press.

Cherian, J. P., & Jacob, J. (2012). A study of green HR practices and its effective implementation in the organization: a review. *International Journal of Business and Management*, *7*, 25–33.

Clarkson, M. B. E. (1995). A stakeholder framework for analyzing and evaluating corporations. *Academy of Management Review*, 20(2), 92-117.

Creswell, J., (2003). Research design: Qualitative, Quantitative and Mixed Methods, 2nd ed., Sage Publications, California.

DuBois, C. L., & Dubois, D. A. (2012). Strategic HRM as social design for environmental sustainability in organization. *Human Resource Management*, *51*(6), 799–826.

Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of pro-environmental psychological climate and employee green values. *Human Resource Management*, *56*(4), 613–627.

Ehnert, I., Parsa, S., Roper, I., Wagner, M., & Muller-Camen, M. (2016). Reporting on sustainability and HRM: a comparative study of sustainability reporting practices by the world's largest companies. *The International Journal of Human Resource Management*. 27, 88-108.

European Commission (2001). Prompting a European Framework for Corporate Social Responsibility, Green Paper and COM 366, Brussels.

Felipe, F.d.A. (2012). Do I look good in green? a conceptual framework integrating employee green behavior, impression management, and social norms. *Amazon, Organizations and Sustainability*, 2(3), 7-23.

Florida, R., & Davison, D. (2001). Gaining from Green Management: Environmental Management Systems inside and outside the Factory. *California Management Review*, 43 (3), 64-84.

Galdeano-Gomez, E., Cespedes-Lorente, J., & Martinez-del-Rio, J. (2008). Environmental performance and spillover effects on productivity: evidence from horticultural firms. *Journal of Environmental Management*, 88(4), 1552-1561.

Govindarajulu, N., & Daily, B. F. (2004). Motivating employees for environmental improvement.*Industrial Management & Data Systems*, 104, 364–372.

Haddock-Millar, J., Chandana, S., & Muller-Camen, M. (2016). Green human resource management: a comparative qualitative case study of a United States multinational corporation. *The International Journal of Human Resource Management*, 27,192-211.

Jabbar, M.H., & Abid, M. (2014). GHRM: Motivating Employees towards organizational environmental performance. *MAGNT Research Report,* 2, 267-278.

Jabbour, C. (2011). How green are HRM practices, organizational culture, learning and teamwork? A Brazilian study. *Industrial and Commercial Training*, *43*(2), 98–105.

Jabbour, C. J. C., & Jabbour, A. B. L. de S. (2016). Green human resource management and green supply chain management: linking two emerging agendas. *Journal of Cleaner Production*, 112, 1824-1833.

Jabbour, C. J. C., de Sousa Jabbour, A. B. L., Govindan, K., Teixeira, A. A., & de Souza Freitas, W. R. (2013). Environmental management and operational performance in automotive companies in Brazil: The role of human resource management and lean manufacturing. *Journal of Cleaner Production*, *47*, 129–140.

Jabbour, C. J. C., Santos, F. C. A., & Nagano, M. S. (2008). Environmental management system and human resource practices: Is there a link between them in four Brazilian companies? *Journal of Cleaner Production*, *16*(17), 1922–1925.

Jackson, S. E., & Seo, J. (2010). The greening of strategic HRM scholarship. *Organization Management Journal*, 7, 278-290.

Jackson, S. E., Renwick, D. W., Jabbour, C. J., & Muller-Camen, M. (2011). State-of-the-art and future directions for green human resource management: Introduction to the special issue. *German Journal of Human Resource Management*, *25*(2), 99–116.

Kedia, B.L. & Mukherji, A. (1999) Global managers: developing a mindset for global competitiveness. *Journal of World Business*,34 (3), 230–251.

Kjaerheim, G. (2005). Cleaner production and sustainability. *Journal of Cleaner Production*, *13*(4), 329–339.

Kothari, C., (2004). Research Methodology: Methods and Techniques, 2nd ed., New Delhi, New Age International (P) Ltd.

Klein, R.M., Ones, D.S., Wiernik, B.M., Dilchert, S., D"Mello, S., & Hill, L. (2012). Understanding the causes of environmentally responsible and irresponsible behavior at work, paper presented at the Sustainability Preconference of the Annual Conference of the Society for Personality and Social Psychology, CA.

Kline, R. B. (2015). Principles and practice of structural equation modeling, 4th ed. New York: Guilford Press.

Lopez-Gamero, M. D., Molina-Azorin, J. F., & Claver-Cortes, E. (2009). The whole relationship between environmental variables and firm performance: Competitive advantage and firm resources as mediator variables. *Journal of Environmental Management*, 90, 3110–3121.

Lulfs, R., & Hahn, R. (2013). Corporate greening beyond formal programs, initiatives, and systems: A conceptual model for voluntary pro-environmental behavior of employees. *European Management Review*, *10*(2), 83–98.

Marconi, N., Froes de Borja Reis, c., & de Araujoc, E.C. (2016). Manufacturing and economic development: The actuality of Kaldor"s first and second laws. Structural Change and Economic Dynamics, 37, 75-89.

Masri, H.A., & Jaaron, A.A.M (2017). Assessing Green Human Resources Management practices in Palestinian manufacturing context: An empirical study, *Journal of Cleaner Production*.

Mishra, P. (2017). Green human resource management: A framework for sustainable organizational development in an emerging economy. *International Journal of Organizational Analysis*, *25*(5), 762–788.

Mishra, R.K., Sarkar, S., & Kiranmai, J. (2014). Green HRM: innovative approach in Indian public enterprises. *World Review of Science, Technology and Sust. Development, 11, 26-42.*

National Planning Commission (2016). Growth and Transformation Plan II (GTP II) (2015/16- 2019/20), Addis Abeba, Ethiopia.

Naude, W. & Szirmai, A. (2012). The Importance of Manufacturing in Economic Development: Past, Present and Future Perspectives, Maastricht Economic and social Research institute on Innovation and Technology, Netherland.

Nishii, L. H., Lepak, D. P., & Schneider, B. (2008). Employee attributions of the "why" of HR practices: Their effects on employee attitudes and behaviors, and customer satisfaction. *Personnel Psychology*, *61*(3), 503–545.

O'Donohue, W., & Torugsa, N. (2016). The moderating effect of „Green" HRM on the association between proactive environmental management and financial performance in small firms. *The International Journal of Human Resource Management*, 27, 239-261.

Ones, D.S., & Dilchert, S. (2012). Environmental sustainability at work: a call to action. *Industrial and Organizational Psychology*, 5, 444-466.

Opatha, H.H.D.N.P., & Arulrajah, A. (2014). Green human resource management: simplified general reflections. *International Business Research*, 7, 101–112.

Paille, P., & Boiral, O. (2013). Pro-environmental behavior at work: Construct validity and determinants. *Journal of Environmental Psychology*, 36, 118-128.

Perron, G. M., Cote, R. P., & Duffy, J. F. (2006). Improving environmental awareness training in business. *Journal of Cleaner Production*, *14*(6–7), 551–562.

Rehman, M.A., Seth, D., & Shrivastava, R.L. (2016). Impact of green manufacturing practices on organisational performance in Indian context: An empirical study. *Journal of Cleaner Production*, 137, 427-448.

Renwick, D. W., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. *International Journal of Management Reviews*, *15*(1), 1–14.

Renwick, D.W.S., Jabbour, C.J.C., Muller-Camen, M., Redman, T., & Wilkinson, A. (2016). Contemporary developments in Green (environmental) HRM scholarship. The International Journal of Human Resource Management, 27, 114-128.

Saeed, B.B., Afsar, B., Hafeez, S., Khan, I., Tahir, M., & Afridi, M.A. (2019). Promoting employee's proenvironmental behavior through green human resource management practices. *Corporate Social Responsibility and Environmental Management*. 26,424–438.

Sammalisto, K., & Brorson, T. (2008). Training and communication in the implementation of environmental management systems (ISO 14001): A case study at the University of Gavle, Sweden. *Journal of Cleaner Production*, *16*(3), 299–309.

Sathyapriya, J., Kanimozhi, R., & Adhilakshmi, V. (2013). Green HRM - delivering high performance HR systems. *International Journal of Marketing and Human Resource Management*, 4, 19-25.

Saunders, M., Lewis, P., & Thornhill, A., (2012). Research Methods for Business Students. 6th ed., England, Pearson Education Limited.

Sauders, M., Lewis, P., & Thornhill, A., (2009). Research Methods for Business Students. England, Pearson Education Limited.

Sohn, S.Y., Joo, Y.G. & Han, H.K. (2007), Structural equation model for the evaluation of national funding on R&D project of SMEs in consideration with MBNQA criteria, Evaluation and Program Planning, 30, pp.10-20.

Sharma, S., & Gupta, N. (2015). Green HRM: an innovative approach to environmental sustainability. Proceeding of the Twelfth AIMS International Conference on Management. 2- 5 January, Calicut, India, 825-830.

Srinivas, K. M. (1995). Globalization of business and the third world: Challenge of expanding the mindsets. *Journal of Management Development*, 14(3), 26-49.

Starik, M., & Marcus, A. A. (2000). Introduction to the special research forum on the management of organizations in the natural environment: A field emerging from multiple paths, with many challenges ahead. *Academy of Management Journal*, 43, 539-546.

Steg, L., Bolderdijk, J. W., Keizer, K., & Perlaviciute, G. (2014). An Integrated Framework for Encouraging Pro-environmental Behaviour: The role of values, situational factors and goals. *Journal of Environmental Psychology*, *38*(0), 104-115.

Stijns, J. (2005). Natural Resource Abundance and Economic Growth Revisited, Resources Policy 30, 107-30.

Szirmai, A., & Verspagena, B. (2015). Manufacturing and economic growth in developing countries, 1950–2005. Structural Change and Economic Dynamics, 34, 46-59.

Tang, G., Chen, Y., Jiang, Y., Paille, P., & Jia, J. (2018). Green human resource management practices: Scale development and validity. *Asia Pacific Journal of Human Resources*, *56*(1), 31–55.

Teshome, A. (2014). Impacts of Manufacturing Sector on Economic Growth in Ethiopia: A Kaldorian Approach. *Journal of Business Economics and Management Sciences* Vol. 1(1).

Tseng, M. L., Tan, R. R., & Siriban-Manalang, A. B. (2013). Sustainable consumption and production for Asia: Sustainability through green design and practice. *Journal of Cleaner Production*, *40*, 1–5.

Veleva, V., & Ellenbecker, M. (2001). Indicators of sustainable production: Framework and methodology. *Journal of Cleaner Production*, *9*(6), 519–549.

Vicente-Molina, M. A., Fernández-Sáinz, A., & Izagirre-Olaizola, J. (2013). Environmental knowledge and other variables affecting pro-environmental behaviour: Comparison of university students from emerging and advanced countries. *Journal of Cleaner Production*, *61*,130–138.

Wagner, M. (2005). How to reconcile environmental and economic performance to improve corporate sustainability: corporate environmental strategies in the European paper industry. *Journal of Environmental Management* 76(2), 105-118.

Zhan, Y., Tan, K. H., Ji, G., Chung, L., & Chiu, A. S. (2016). Green and lean sustainable development path in China: Guanxi, practices and performance. *Resources, Conservation and Recycling*. http://dx.doi.org/10.1016/j.resconrec.2016.02.006 (in press).

Zibarras, L. D. & Coan, P. (2015). HRM practices used to promote proenvironmental behavior: a UK survey. International Journal of Human Resource Management, 26(16), pp. 2121-2142.

Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2010). Business Research Methods. Eighth edition, Mason, OH: South-Western Cengage Learning.

Appendix I: Measurement Scale Used

Items		**Scale**				
A. Green Human Resource Management Practices						
S.N	**Green Recruitment & Selection**	1	2	3	4	5
1	In my organization, job description specification includes environmental concerns.					
2	My organization selects applicants who are sufficiently aware of greening to fill job vacancies.					
3	My organization includes environmental criteria in the recruitment messages.					
4	In this organization, job positions are designed that focus Exclusively on environmental management aspects of the organizations.					
5	My organization indicates or makes transparent its environmental performance (past and current) in recruitment messages.					
Green performance management and appraisal		1	2	3	4	5
1	Employees know their specific green targets,goals and responsibilities.					
2	Environmental behaviors and contributions to environmental management are assessed and included in performance /appraisal indicators and recorded.					
3	This organization provides regular feedback to the employees or teams to achieve environmental goals or improve their environmental performance.					
4	This organization establishes environmental management information system and environmental audits.					
5	This organization introduces or formally evaluates all employees' green job performance (as far as possible).					
Green training and development		1	2	3	4	5
1	My organization provides environmental training to the organizational members to increase environmental awareness.					
2	Takes into account the needs of environmental issues when training requirements are analyzed.					
3	All training materials are available online for employee to reduce paper cost.					
4	Environmental training is a priority when compared to other types of company‟s training.					
5	My organization provides environmental education to the workforce.					
6	My organization applies job rotation to train green managers of the future.					

7	My organization provides opportunities to everybody to be trained on environmental management aspects.					
Green reward and compensation		1	2	3	4	5
1	Environmental performance is recognized publicly (awards, dinner, and publicity).					
2	My organization applies financial rewarding for good employee environmental performance.					
3	My organization applies non-financial rewarding for good employee environmental performance.					
4	My organization uses rewards for innovative environmental initiative/performance.					
5	My organization communicates its employee‟s environmental excellence.					
Green empowerment		1	2	3	4	5
1	My organization recognizes employees as a key stakeholder in environmental management.					
2	My organization provides opportunities to negotiate with management about green workplace agreement.					
3	My organization introduces green whistle-blowing and help-lines.					
4	My organization offers workshops or forums for staffs to improve environmental behavior and exchange their tacit knowledge.					
5	Involves employees in formulating environmental strategy.					
B. Proenvironmental behavior		**1**	**2**	**3**	**4**	**5**
1	I make suggestions and bring new ideas about environmentally friendly practices to environmental committees.					
2	At work, I take part in environmentally friendly programs.					
3	I share my knowledge about the environment with co-workers.					
4	At work, I question practices that are likely to hurt the environment.					
5	In my work, I weigh the consequences of my actions before doing something that could affect the environment.					
6	At work, I perform environmental tasks that are not required by my company.					
7	At work, I avoid wasting resources such as paper, electricity or water.					