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Influence of green human resource management on employees' behavior through mediation of environmental knowledge of managers

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Abstract. Lately, there has been a rising awareness of the significance of becoming green and applying different environmental management strategies within the corporate community. This paper endeavours to explore the adoption of Green HRM practices by managers in Patan Industrial Estate. This study addresses the importance of knowledge development in relation to HRM practices and employee behavior. The goal is to see how Green HRM influences EGB in Patan Industrial Estate through mediation of managers' environmental knowledge. Exploratory research design was chosen as the primary study paradigm to determine the truth. The data was evaluated quantitatively by using both descriptive and inferential statistics. The associations between the 113 replies

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were analyzed using SEM. According to the findings of the study, environmental knowledge does not operate as a facilitator between Green HRM and EGB. This result is also theoretically significant in terms of the AMO theory. However, Green HRM is an emerging concept that deserves more attention. Employees and organizations must make even more changes to ensure that greening processes are implemented in all of their activities. General recommendations for successful implementation of Green HRM practices include revising the vision, mission and organization policies of an organization, ensuring its ISO certification, advancement of technologies, and enhancing GHRM practices by providing training and empowering employees, as well as participating in proactive government initiatives.

Keywords: GHRM, EGB, environmental knowledge, managers, pro-environmental behaviors, sustainability, Patan industrial estate, Nepal

JEL Classification: J24, M12, M14, O15, Q01, Q56

1. INTRODUCTION

Environmental issues are among the most important global concerns of the 21st century and people have shown great initiative in making the world greener (Miraj et al., 2019). Green HRM is an emerging topic in the present context and has become a key word in the business field. It has secured a prominent position in research due to increasing awareness of environmental and sustainable development all around the globe (Chaudhary, 2020), being totally aligned with the current trends of corporate social responsibility development (Vo et al., 2020) and ensuring the growth of firms' social capital (Mishchuk et al., 2023). The special attention that global challenges of climate change, high carbon emission, green development and green movement have received since the late 1990's (Khanal et al., 2023) gave rise to Green HRM. As a consequence of increased influence from environmental challenges, businesses and industries have been forced to create and apply green management through ecologically friendly methods and products (Mwita, 2019). The customer behaviour changes became a significant driver of the appropriate management changes in this regard (Holotová et al., 2020). Thus, Green human resources management has been around for about two decades as an area of research interest and fascination for academicians and researchers (Mtembu, 2017). Bunge et al. (1995), Wehremeyer (1996), and Bauer & Smith (1996) were among the seminal researchers in this area. Green HRM began to gain prominence as more interest was generated by scholars, consultants and practitioners in the mid 1990's and early 2000's (Bunge et al., 1995; Wehremeyer, 1996; Daily & Huang, 2001; Zoogah, 2001). Today, the business world is becoming more global, and businesses are transitioning from a traditional financial structure to a contemporary capacity-based economy that is ready to investigate green elements of business through the use of diverse green technologies and environmental management strategies (Ahmad, 2015).

In the same way, theories interlinked with GHRM provide a sound theoretical framework. These theories that take impetus from several theories related to organizational management and human relations are Institutional theory, System theory, Resource based theory, Stakeholder theory, Process theory, AMO theory, Triple Bottom Line theory, Organizational Change theory etc. (Arulrajah and Opatha, 2016). Thus, the relevant theories add more sensation and understanding to the field of Green HRM.

The review of studies from several countries Ramasamy et al. (2017), indicates that the scope and depth of Green HRM practices differ in developed and developing countries, and in comparison to those companies that have implemented GHRM policies in industrialized nations, while rarely in underdeveloped

countries. They further reveals that top 25 companies in the world are in the developed countries with a green score of 72% to 89.2% but the green score of companies in developing countries is anticipated to be lower than 40%. Rani and Mishra (2014) emphasizes that GHRM is a noble concept and limited research have been compiled in the field of Green HRM. The study reveals that the level of awareness of Green HRM does not always guarantee the implementation in the organization. The earlier studies reveal that Human Resource Management is a crucial stakeholder in greening an enterprise. As the human resources department can play a vital role in turning green, GHRM has become an important corporate strategy. In the context of Nepal, there are no research works conducted in the field of GHRM. However, evidences beside Nepal mirror that Green HRM have been invested and implemented by various organizations. The focus is mainly on environmental friendly-HR initiative, green intellectual capital and corporate environmental citizenship that stimulate a green culture and behavior within the organization and promoting sustainability.

Green developments, GHRM initiatives, Green movements, Green technology and clean energy are the priority sectors and have received special attention in industrial sector in recent times (Ghouri et al., 2020). The various Green HRM techniques such as electronic filing, teleconferencing & virtual interviews, jobs and ride sharing, recycling, telecommunicating, online trading, developing energy efficient office space etc. are being practiced by large number of organizations all around the globe (Rani and Mishra, 2014). Green recruitment & selection, Green T&D, Green performance management, Green compensation, Rewards & pay system, Green employee relations & involvement, Supportive culture and employee empowerment in GHRM are being incorporated for enhancing GHRM facets by organization (Ramasamy et al., 2017). Top executive support, workplace training, staff involvement and empowerment, teamwork, and incentives systems are all critical parts in the implementation of GHRM, according to the report, and should be given top importance by the firm (Mtembu, 2017). To ensure that green HRM is sustained, organizations must focus on green competencies, green attitudes and green behaviors of employees. Each organization should have its own green policy and work together with the central government to achieve a successful green management program. To make the GHRM effective well practiced, skilled and proficient HR is needed in organization and thus organization should integrate green standards and green criteria in their operational activities (Miraj et al., 2019; Devkota et al., 2022). Written policy statements, environmental job titles, capital investment, auditing methods, new product design & development, production processes, marketing tactics, and other changes in corporate viewpoints connected to environmental & green efforts should be made and focused on (Ahmad, 2015). Both organizations and the Nepalese government should take the lead in supporting and raising awareness about GHRM.

In order to raise awareness among Nepalese citizens, the organization's Green HRM activities must be disseminated to all stakeholders. Referring to Nepalese scenario, Green HRM is a noble concept and there are numerous queries that need to be addressed: What is the general understanding of the GHRM concept among the managers in Patan Industrial Estate? What are the impacts of Green HRM initiatives on manager green behavior through mediation of Environmental knowledge? What are the hurdles that managers encounter when it comes to implementing Green HRM practices? What is the Management strategy for promoting Green HRM practices? Hence, this research aims at bridging the gap by raising awareness of pro - environmental behavior and investigating how green HRM influences EGB. It investigates role of environmental knowledge as a mediating factor and figures out whether Green HRM has an impact on EGB by examining the environmental knowledge of managers of Patan Industrial Estate.

The paper's remaining sections are organized as follows: Section 2 outlines the methodology, section 3 presents the results and analysis, section 4 engages in discussion, section 5 highlights the study's contributions, and section 6 concludes with recommendations for future actions.

2. METHODOLOGY

2.1. Conceptual framework

This research employs various theories to underpin the Green Human Resource Management (GHRM) themes including its meaning, process model, outcomes, stakeholders, and performance. Theoretical frameworks like Institutional theory, Resource-Based View (RBV) theory, System theory, Stakeholder theory, Triple Bottom Line (TBL) theory, Ability-Motivation-Opportunity (AMO) theory, and Organizational change theory shape these themes. Institutional theory elucidates the impact of external pressures on organizational outcomes, while RBV theory underscores the role of unique resources in gaining a competitive advantage, emphasizing employees' green attitudes, knowledge, skills and behaviors (Mathews et al., 2017). System theory views organizations as open social systems that interact with the environment and contribute to competitive advantage (Chih & Sapphire, 2017). Stakeholder theory highlights the influence of stakeholders on organizational decisions, resources, and performance, with engagement being a key factor in GHRM's success (Mcabee, 2021). Similarly, TBL theory advocates a balanced focus on profit, people, and planet, urging companies to address social and environmental concerns (Citta et al., 2020). AMO theory examines the interplay of employees' ability, motivation, and opportunity, offering insights into GHRM's influence on green innovation and environmental performance (Arulrajah & Opatha, 2016). Organizational change theory addresses the shift toward environmentally sustainable operations, involving stages of unfreezing, changing, and refreezing attitudes and behaviors (Lei et al., 2018).

The study employs an AMO theory-based framework to explore GHRM's influence. The AMO model links GHRM practices to collective Organizational Citizenship Behaviors for the Environment (OCBEs). Drawing on AMO theory and existing GHRM literature, the researcher constructs a framework revealing GHRM's impact on Employees' Green Behavior (EGB) mediated by their environmental knowledge (Figure 1). Green HRM practices are independent variables, EGB is the dependent variable, and Environmental Knowledge is the mediating variable. This framework unveils how GHRM affects EGB, offering a structured approach to investigate the relationship between GHRM, eco-friendly behavior, and environmental knowledge, guiding empirical exploration for understanding GHRM's role in fostering positive behavioral change.

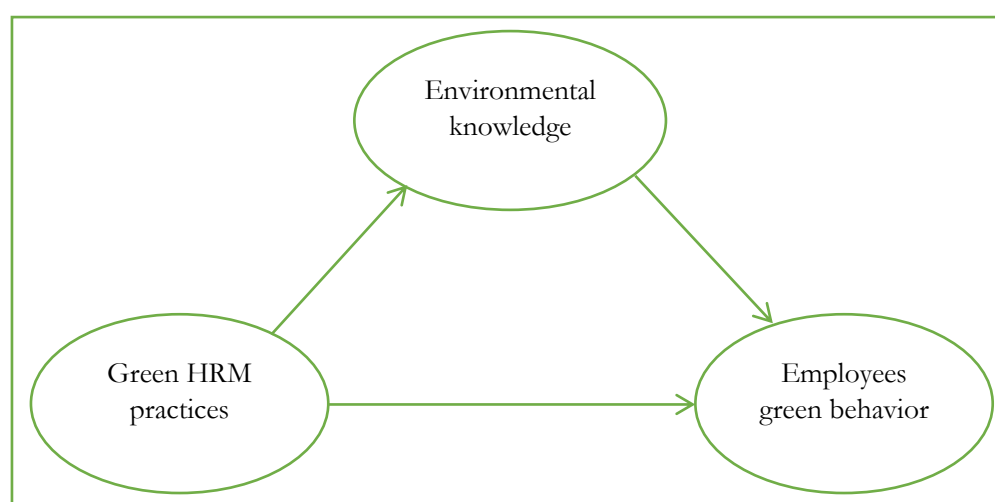


Figure 1. Conceptual Framework
Source: Fawehinmi et al. (2020)

2.2. Hypothesis formulation

Green HRM and employees' green behavior (EGB): Green HRM practices provide employees with a means for understanding how an organization supports green values, commitments, training, performance management, encouragement, rewards and recognitions and also seeks feedback from employees on how to improve the environmental management process (Blok et al., 2015). Employees perception of organization support towards environmental plays a vital to the motivation of EGB, and could be supported by environmental policies, performance appraisals, encouraging employee involvement etc (Shen et al., 2018). Bos-Nehles et al. (2013) have found that green HRM has an influence on employees' commitment and motivation to organizational objectives like environmental sustainability initiatives. By implementing GRS, GT, GPM, GPR and GIP in organizations, employees will be psychologically inclined to understand what they're expected to achieve and what they benefit from, increasing their commitment to and motivations for EGB to deliver supporting environmental sustainability initiatives (Mishra, 2017). This would thus lead to employee-friendly attitude towards the environment in the workplace.

H₁: Green HRM positively and significantly affects EGB

Green HRM and environmental knowledge: Green HRM practices affect employees' environmental knowledge, as GRS, GT, GPM, and GPR and GI symbiotically work to enhance environmental knowledge of employees (Moraes et al., 2019). The organization, by fostering environmental protection, education and training and creating environmental recruitment and selection policies, performance management, rewards and participation, etc., can increase employee environmental knowledge (Saeed et al., 2019). The knowledge of environmental protection makes employees aware of the importance and usefulness of workplace greening. Green HRM is important to align with environmental management by encouraging employees to participate in environmental management initiatives through knowledge and attitude development (Fawehinmi et al., 2020).

H₂: Green HRM positively and significantly affects environmental knowledge

Mediating role of environmental knowledge: An increase of environmental knowledge strengthens the effect of Green HRM practices on EGB and Environmental knowledge development through Green HRM helps to create sustainable environmental behavior (Saeed et al., 2019). Green HRM is an external influence and is supposed to influence the cognition and internal attributes of employees which leads to EGB performance (Chaudhary, 2020). Green HRM practices need greater cognitive and interpersonal skills, such as environmental knowledge, to influence the performance of green jobs (Ren et al., 2018). Environmental knowledge is a key instrument for performing EGB. In order to develop environmental knowledge employees must feel the psychological readiness to acquire it (Markey et al., 2019). Therefore, environmental knowledge has a distinctive role to play for the efficacy of Green HRM practices on employee Green behavior and performance.

H₃: Environmental knowledge mediates the relationship between Green HRM and EGB

2.3. Measurements

The study's first segment was focused to questions about Green HRM practices in Patan Industrial Estates with 7 measuring items (see Table 1). Green Training, Green Reward and Compensation, Green Recruitment and selection, Green policy and Green Involvement & Participation adapted from Fawehinmi et al. (2020). Similarly, items like Green Performance Appraisal and Green promotion behavior were adapted from Dumont et al. (2016). The second section of the study examined Employees' Green Behavior in the workplace and was measured by 7 items again as Printing, Computer use, Light use and Recycling from

Fawehinmi et al. (2020). Similarly items like sustainable shopping, Heating and Drinking were adapted from Blok et al. (2015). Environmental knowledge was assessed using eight items that examined awareness of environmental issues. The items such as understanding, knowledge & awareness were adapted from Fawehinmi et al. (2020). Items like development and promotion were adapted from Cabral and Lochan Dhar (2019) and observed items like clean energy, green program and climate change were adapted from Saeed et al. (2019).

Table 1

Observed variables and its description

Construct	Observed variables	Variable notation	Explanation
Green HRM practices	Green training	GHRM_1	Green training to promote green organization values
	Green reward and compensation	GHRM_2	Green behavior to reward and compensation
	Green involvement and participation	GHRM_3	Employees suggestion on environmental improvement
	Green promotion	GHRM_4	Employees green behaviors in promotion.
Employee green behavior	Printing	EGB_1	Proper use of paper
	Computer use	EGB_2	Switch off the computer/ notebook
	Light use	EGB_3	Switching off the lights
	Recycling	EGB_4	Plastics products are recycled
Environmental knowledge	Understanding	ENV_KN_1	Understanding of pollution caused by human activities.
	Knowledge	ENV_KN_2	Knowledge about environmental issues
	Awareness	ENV_KN_3	Awareness about protecting industry premises from pollution.

2.4. Study area and population

The study area chosen for the study is Kathmandu valley which comprised of three districts namely Kathmandu, Lalitpur and Bhaktapur and located in province no. 3 of Nepal (Shrestha et al., 2020). The geographic coordinates of Kathmandu valley are: latitudes 27°32'13" and 27°49'10" north and longitudes 85°11'31" and 85°31'38" east and is located at a mean elevation of about 1,300 meters (4,265) above sea level in the bowl-shaped and thus Kathmandu valley covers an area of 395 km² (Pant & Dongol, 2009). Kathmandu Valley is located in the central part of the country as well as the capital city of Nepal with the population of around 1.47 million people. The Kathmandu valley is the center of various major industries (Rajbhandari et al., 2022) and because of the lack of infrastructural development and services, the Kathmandu valley has become a hub for many business and service activities (Ishtiaque et al., 2017). Being the capital city of Nepal and one of the only regions that accumulates highest density of population and center for different major industries, conducting a research on Green HRM practices in industrial Estate of Kathmandu valley remains significant. The valley has three industrial zones that are located in Balaju, Patan and Bhaktapur (Rajbhandari et al., 2020). The study concentrates that Patan Industrial Estate with the total area of land in the Patan Industrial Estate was 293 ropanies of which 293 ropanies well developed. There were 118 factories within the district, 113 of which were in operation. Thus, the population of this study is 113 respondents, especially managers of respective industries from Patan Industrial Estate.

Since a census method was adopted in this study, there was no sampling in selecting respondents for quantitative study. A census is a sort of data collection that involves the entire population and gathers

information from every member of the population (Mtembu, 2017). The target population for this study was managers from Patan Industrial Estate and the total population of the study remained 113. Because the total population for this study was a good and manageable size in terms of answering the research question, collecting data, and analyzing data, the researchers decided to use a census survey method. Each member of the population had the option to participate in the census survey, the collected data through this method is considered more accurate, detailed as well as it is also easier to administer and report because it encompasses the whole population (Parker, 2011).

2.5. Research instrument, data collection and analysis

Structure questionnaire with interview was the main research instrument used in this study. A structure questionnaire has been developed and devised to conduct survey as well as obtaining primary data on Green HRM practices in industry for data collection. The researchers have linked questionnaire in order to meet the various objectives mentioned above in the study. Both open and close-ended questions were designed to address the issue of study that were in lucid language in order to convey the intent of the questions. After the preparation of questionnaire, the researcher focused on the sequencing and arrangement of the questionnaire. The formulated structured questionnaires were administered in KOBO toolbox for data collection. After the Questionnaire was administered into KOBO toolbox, a pilot survey of a few samples questions was tested in order to confirm the consistency and accuracy of the instrument. For the data collection permission was taken from the administration of Patan Industrial Estate.. Data were collected from the month of April 2021 to June 2021. Finally, interview was conducted among the managers of respective industries i.e. General manager, Management team members, Quality managers and other managers of Patan Industrial Estate. Data analysis was performed with the help of descriptive analysis and inferential analysis consisting of structural equation modeling based on several latent constructions.

3. EMPIRICAL RESULTS AND DISCUSSION

3.1. Socio-demographic characteristics

The study tries to analyze Socio-demographic characteristics of human resources working in Patan Industrial Estate. It reveals that the average age of the respondent is 44 years whereas 19 years of age is the lowest and 69 is the highest. Out of these, 113 respondents, only 15% respondents are below the age 30 while most of the respondents come with the age group of 41 to 50 years (Table 2). When it comes to sustainability, age is also important, especially when the workforce consists of people from diverse generations with different perspectives, attitudes, and sensitivities toward environmental issues (Twenge 2010; Jeronimo et al. 2019). There are several claims that younger generations are concerned about environmental issues. Among these respondents, 74% of them are male and 26% are female which shows that there are perceptual differences towards HRM policies and practices likely to exist between Genders where men perceive greater level of importance. Meinze-dick et al. (2014) state that gender plays an undeniable role in sustainability. Several studies (Zelezny 2000; Jeronimo et al. 2019) mirror how that women have more pro-environmental values, beliefs, attitudes, and activities than men.

Table 2

Profile of the respondents

Variable	Category	Frequency	Percentage
Gender	Male	84	74
	Female	29	26
Age	Below 30	17	15
	31-40	30	27
	41-50	37	33
	Above 50	29	26
Education level	SEE	21	19
	Plus 2	15	13
	Bachelors	47	42
	Masters	30	27
Working experience	Below 10	50	44
	11-20	44	39
	21-30	15	13
	Above 30	4	4
Industry classification	Manufacturing	99	87.61
	Agriculture and forest based	10	8.85
	Construction	2	1.77
	Service	2	1.77
Scale of industry	Small scale	68	60
	Medium scale	45	40
Work position	General manager	58	51
	MTM	33	29
	Quality manager	21	19
	Others	1	1

Source: Field survey, 2022

The result of the study shows majority of the respondents (42+26=68%) received bachelor's and master's degree indicating that the higher level of academic qualification amplifies successful execution and implementation of Green HRM practices. Silva and Pownall (2014) reveals that those with a university education place a higher priority on reducing carbon emissions and improving social welfare, as well as going green. The majority of the respondents have less than 10 years of working experience and they utilized the highest group of human resources in Patan Industrial Estate. Similarly majority of the industry were manufacturing industries where 60% of them were small scale and 40% as medium scale industries. It shows that Patan Industrial Estate is promoting medium, small & cottage industries, handicraft etc as well as encouraging local people for entrepreneurship. Hence, 51% of the respondents remain in the position of General Manager which suggests that designation of employees plays significant role in the execution and implementation of Green HRM practices. Finally, Mtembu (2017) states that designation of employees has eminent impact on the overall HRM policies and is vital for the success of greening initiatives in the organization.

3.2. General understanding on green HRM practices

From the study, it was observed that 55% of the respondents agreed that cost was above average factor, 91% of the respondents considered moral obligation as a strongest factor, 48% of respondents considered it as above average factor while 48% of the respondents considered it as above average factor behind the

application of Green HRM practices. Likewise, 77% of the respondents considered that there is direct involvement of HRM in Green programs as HR division has the ability and potential to make a difference by influencing a shift in the institution's greening culture (Mathapati and Nelson, 2013; Ahmad, 2015). Similarly, the eminent initiative undertaken by industries to promote Green HRM practices were Recycle, Reuse and Recovery (99%), use of E-mail & E-payment (97%), participation & involvement in Environmental awareness (94%), and energy efficient office space (72%). Hence a lot of internal efforts required from organization to achieve full commitments towards green initiatives and embedding a culture of sustainability (Papania and Papania, 2010).

In addition, 98% of industries in Patan Industrial Estate incorporating environmental management into business operation. Several studies (Jackson & Seo, 2011; Renwick et al., 2013; Zibarras and Coan, 2015) stated that incorporation of Environmental management into business operation is the most common means of encouraging human resources in a pro-environmental ways. Organization size influences incorporation of environmental management into business operation (Grant et al., 2002) where as it is plausible that larger organization have more resources to implement environmental management into business operation (Wagner, 2011). Likewise, 90% of the respondents opined that existing technology is not sufficient for adoption of Green HRM practices. Thus, it reveals that majority of the industries should modernize their infrastructure (Johnson and Gueutal, 2017) and use modern technologies for promoting Green HRM practices.

3.3. Impact of green HRM on employees green behavior through the mediation of environmental knowledge

This results show that the majority of industries in Patan Industrial Estate have a moderate knowledge and understanding about Green HRM practices. The result obtained was disappointing bad on the issues of reward & compensation, performance management system and promotion. There is no established green culture as there are numerous challenges in the adoption of green HRM initiative in industries (Cheema et al., 2015) and a lot still needs to be done in order to contribute to the realization of greening the institution (Ramasamy et al., 2017). In terms of EGB, most of the respondents agree to apply green behaviors in the workplace. The green behaviors such as printing double side, switching off the computer, recycling plastics and sustainability purchasing of goods cited saving resources and cost efficiency as a major benefit. Thus, green behaviors of employees in workplace should be promoted for achieving sustainable development of the organization (Zhang et al., 2019). In terms of environmental knowledge most of the respondents have good knowledge about environmental issues, climate changes, and environmental management system. Many initiatives need to be done in the development of environmental emergency plan and green programs (Koshish, 2019). Thus, environmental knowledge should be enhanced for developing responsible green behavior (Fawehinmi et al., 2020) and for proper implementation of Green HRM practices (Ren et al., 2017).

3.4. Challenges in adoption of green HRM practices

From the analysis about challenges in adoption of Green HRM practices in the research, the modal response reveals that all the industries (100%) have challenges in adoption of Green HRM practices. the results of this study indicated that staff resistance & provoking thinking (100%), lack of understanding Green policies (99.12%), lack of infrastructure (95.58%), creating green working structure & working progress (89.39%), and lack of management support (50.44%) were the most eminent challenges faced by Patan Industrial Estate while adoption of Green HRM practices. (Islam et al., 2019) identified lack of knowledge, no norms for practicing, a lack of managerial interest and organizational support (Oyedokun,

2019), high expenses of practicing, lack of comprehensive plan, ambiguous green values etc was the major challenges in applying green HRM practices in industries (Fayyazi et al. 2015). Similarly, the majority of the respondents stated that employees, BOD, government policy and organizational policy were the significant entities responsible for adoption of green HRM practice. Likewise, majority (83%) of the respondents felt that challenges would occur frequently in adoption of green HRM practices in Patan Industrial Estate.

3.5. Managerial solution

After that last section entails the managerial solution for the effective execution and implementation of Green HRM practices in Patan Industrial Estate. The study identifies some of the effective strategies for effective adoption of green HRM practices such as Eco-friendly HRM initiatives and sustainable resources' use (Ahmad, 2015), Eco-friendly working culture, skills and behaviors (Kim et al. 2019), Recycle, Reuse & Recovery practices (Xie & Buavaraporn, 2019), and Prioritization of environmental agenda (Mandip, 2012). The finding also revealed that every designated authorities such as employees (99%), General managers (97%), BOD (89%), and HR managers (14%) have an eminent part to play in the successful adoption of green HRM practices. Finally, incorporation of environmental agenda, Technoloical & infrastructural advancement, Green culture through green agenda & technology, Eco-friendly initiatives & policy, Hiring educated workforce, Policy implementation by government and sustainable development were the valuable take always provided by the human resources employees of Patan Industrial Estate. Islam et al. (2019) has outlined that inclusion of green job description, strict rules and regulation, monitoring, mandatory course in universities, T&D programs etc. can be effective for implementation of green HRM practices.

3.6. Inferential analysis

Summary statistics

Before beginning the data analysis, make sure the sample size, variable scale, and multivariate normal distribution are all correct. According to Hair et al. (2018), to be qualified to use the SEM technique, a sample size of 50 to 400 observations is necessary. As a consequence, the present study's large sample size (N=113) fulfills the criteria of 50 or more observations to explore utilizing a SEM. Furthermore, Skeweness (-3 to +3) and Kurtosis (-7 to +7) are both within range, showing that normalcy is not a problem. As a consequence, given the multivariate model's essential assumptions being met, it is acceptable to conclude that no statistically significant violation exists.

Exploratory factor analysis (EFA)

EFA with varimax rotation was performed separately on Green HRM, employee green behavior, and environmental knowledge in order to extract the dimesnison of each construct. The KMO was 0.742, and the sphericity test by Bartlett were significant ($P < 0.001$). The communalities value was extracted with the minimum threshold of 0.50 and only those items fulfilling the criteria was extracted for study. These findings confirmed the factorability of the correlation matrix by demonstrating the appropriateness and applicability of the sample data. Each item's individual factor loading was checked, as given in table 3. The items fulfilling the minimum threshold of 0.70 was extracted for the study and some of the items of each construct were removed due to low factor loading. Furthermore, rotated component matrix helped in reducing the dimensionality in dataset. As shown in table 3, the value of Cronbach's alpha is greater than 0.85 which represent good internal consistency among variables.

Common method bias

Because the data for the study's independent and dependent variables came from the same source (i.e. Patan Industrial Estate), the items of the constructs were evaluated for the presence of Common Method Bias (CMB). To decrease possible CMB, this research took the following design-related steps. Various procedural and statistical measures were used in the research. For procedural measures, we prequalified potential respondents to ensure that they were knowledgeable about the research topic (i.e. Green HRM). Second, all respondents were notified that their responses were kept confidential. Finally, we separated the independent and dependent variables and constructs as well as randomized items inside each construct. For Statistical Measures, Harmon's Single Component test was performed to see if most of the variance can be explained by a single factor. We limited the number of components recovered in the Exploratory Factor Analysis (EFA) to one instead of extracting by Eigen value. Because the single factor demonstrated that the first factor accounted for 35.35 percent of the overall variation, but not the bulk of the variance in the study's variables. As a result, CMB does not pose a hazard or pose any concerns for the current study.

Measurement model

The two-stage approach's measurement model is the first step in performing multivariate causal modeling. The key parameters that make up the measurement model are composite reliability, discriminant validity and convergence validity. According to Hair et al. (2018), three estimations are commonly employed to verify the convergent validity of each variable: Average Variance Extracted (AVE), Loading Factor and Construct Reliability (CR). To assess the scale's composite reliability, all three crucial ratio values of the subscale were computed. Hair et al. (2018) suggested CR value greater than 0.70 as an acceptable value and AVE value greater than 0.50 as acceptable for appropriate composite reliability. Table 3 shows that all of the Construct Reliability (CR) values were more than the minimal threshold value of 0.70, and that all of the sub constructs had AVE values larger than the standard value of 0.50, indicating that the scale had convergent validity. As shown in Table 3 the factor loading on all of the items were larger than 0.70, indicating that they were all significant. This confirms the scale's Convergent validity. The Discriminant Validity was established by comparing $AVE > MSV$ and also by comparing association of the correlation between all the variables and the square root of AVE of the entire constructs. As presented in Table 4, the condition of $AVE > MSV$ is fulfilled and the value of square root of AVE (i.e. 0.813, 0.809 & 0.887) is greater than inter-construct correlation. Thus, finding demonstrates good discriminant validity.

Table 3

Reliability and validity

Construct	Indicators	Factor loading	Cronbach's alpha	CR	AVE	MSV
GHRM	GHRM_1	0.986	0.859	0.881	0.655	0.102
	GHRM_2	0.857				
	GHRM_3	0.684				
	GHRM_4	0.668				
EGB	EGB_1	0.774	0.859	0.885	0.661	0.102
	EGB_2	0.866				
	EGB_3	0.904				
	EGB_4	0.692				
ENV_KN	ENV_KN_1	0.959	0.908	0.916	0.786	0.024
	ENV_KN_2	0.717				
	ENV_KN_3	0.962				

Note: 3 items from Green HRM, 3 items from EGB and 5 items from ENV_KN was deleted due to low factor loading

Table 4

Latent construct correlation

SEM correlations			
	EGB	GHRM	ENV_KN
EGB	0.813		
GHRM	-0.32	0.809	
ENV_KN	0.050	-0.156	0.887

Structural model

CFA was used to assess the attributes of the constructs in the structural model, with maximum likelihood estimation techniques in AMOS. Seven common measures were employed to determine the measurement model goodness of fit i.e. CMIN/DF, RMR, GFI, CFI, TLI, IFI and RMSEA. As shown in the table 5, all the respective model fit indices satisfies the minimum threshold criteria: CMIN/DF=1.673, RMR=0.027, GFI=0.910, CFI=0.967, TLI=0.956, IFI=0.968 and RMSEA=0.078. As a result, the structural model looks to be a good fit for the study purpose.

Table 5

Measures of Model Fit

Fit indicators	Good fitting	Acceptable value	Obtained value	Decision for model fit
(CMIN/DF)	<3 excellent; <5 sometimes permissible	<5 it can be accepted	1.673	Excellent
RMR	<0.08	<0.08	0.027	Excellent
GFI	>0.90	>0.80	0.910	Excellent
CFI	>0.95	>0.90	0.967	Excellent
TLI	>0.95	>0.90	0.956	Excellent
IFI	>0.95	>0.90	0.968	Excellent
RMSEA	<0.08	<0.08	0.078	Excellent

Path analysis and hypothesis testing

To evaluate the validity of the postulated routes, the statistical significance of all structural parameter values was examined (Figure 2).

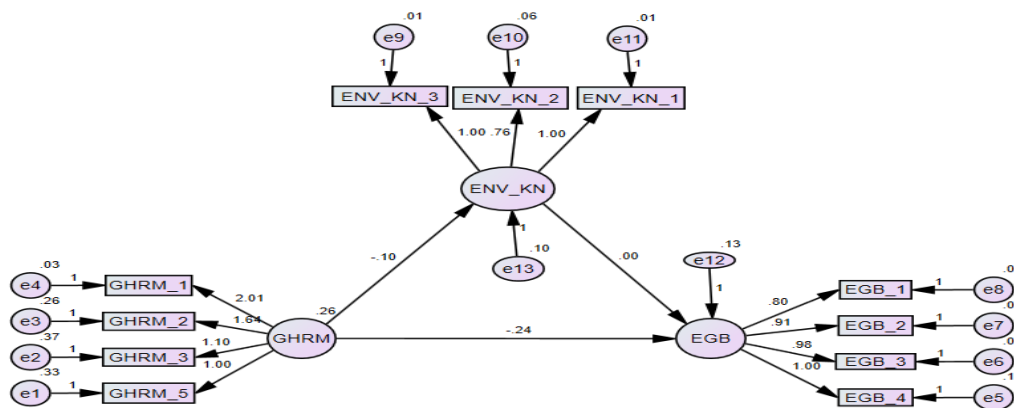


Figure 2. Structural Model

The findings from the analysis implied that Green HRM significantly influence Environmental Knowledge (path coefficient=-0.235; P value < 0.05). Hence, the hypothesis H₁ was statistically significant and was supported. On the other hand Green HRM had no significant association with Environmental Knowledge. Hence, the hypothesis H₂ was not supported. Table 6 shows the structural model's parameter estimations, including standardised regression estimates, standard error, critical ratio, and significant values for the corresponding regression weights. All of the values in the table were derived from the test results generated by AMOS 24.

Table 6

Path estimates for structural model

	Estimate	S.E.	C.R.	P	Conclusion
GHRM→EGB	-0.235	0.079	-2.973	0.003	Hypothesis accepted
GHRM→ENV_KN	-0.099	0.062	-1.598	0.110	Hypothesis Rejected

As stated earlier, environmental knowledge modulates the connection between Green HRM and EGB, according to Hypothesis 3. For comprehending mediation analysis, we used Sobel test. The result demonstrated that environmental knowledge doesn't play any mediating role between Green HRM and EGB as Sobel test value indicates (0.4177, p=0.676>0.05). Thus there is no indirect effect of Green HRM on EGB through Environmental Knowledge.

4. DISCUSSION

Growing global environmental concerns (Kamili, 2018; Gholami et al., 2016; Rahoo and Khan, 2020) and the introduction of international standards (Mandago, 2019; Ahmad, 2015) has put the corporate under pressure to speed up their transition towards adequate adaptation of environmental management strategies and programs (Prasad, 2013). Specific accords to tackle climate change, such as Kyoto-1997, Bali-2007 and Copenhagen-2009, have sparked renewed interest in environmentalism throughout the world (Victor, 2011). Berawi et al. (2019) stated environmental management, sustainable development, green initiatives and corporate social responsibility as key words for business community in 21st century. Mandip (2012) indicated a need of becoming green and implementing (Mamum, 2019) various environmental management measures. Strong leadership and a tangible procedure are required for the successful implementation of sustainable business strategy in a company (Glavas et al. 2010). Sustainability issues is quickly moving up on the priorities list of the leader of corporate world (Ahmad, 2015) and incorporating green into corporate strategy securing prominent position in business(Saifulina et al. 2020).

The company is transitioning from a traditional financial structure to a new capacity-based economy, and the HR department can help the company go green. In review of studies from several countries (Pallavi and Bhanu 2016; Ramasamy et al., 2017), there is a clear indication that the scope and depth of Green HRM initiatives and practices differ in developed and developing countries. According Rani and Mishra (2014), Green HRM is a novel concept in both developed and developing countries and hence limited research have been compiled. Pallavi and Bhanu (2016) agreed in comparison to wealthy nations, just a few organizations in poor countries have implemented GHRM programs. (Ramasamy et al., 2017) revealed that with a green score of 72 percent to 89.2 percent, the top 25 green corporations in the world are located in developed nations. but Green HRM is a relative new concept in developing countries, the green score of companies in developing countries is anticipated to be lower than 40%. The developed countries have advanced technological infrastructure but developing countries lack modern facilities (Xavier and William, 2017; Bilan et al., 2023). Many organizations in developed nations have continued to embrace the concept of green HRM by implementing relevant green initiatives with the goal of maintaining

sustainable environmental performance (Mtembu, 2017). Most of the developing countries are still facing economic development problems, some companies are yet to attain the CSR which is eminent in terms of going green (Ramasamy et al., 2017). Many business from developed & developing nations are going global, the sustainability concept becomes key in their operation (Cooper, 2014; Blahová et al., 2022).

The finding revealed that majority of the industries and their various divisions have moderate comprehensions of what green HRM is about. As a result there is minimal application of green HRM principles in HR and is not carried at optimal level (Mtembu, 2017). When compared to countries that have invested in more research and promoted more awareness of this area of HR, Nepal's green HRM implementation looks behind. Countries such as Brazil, India, China, the United Kingdom, the United States, and others have made progress in implementing green HRM principles in their institutions and organizations in general. The findings also highlighted that knowledge and awareness of green HRM does not always equate to application and implementation (Oyedokun, 2019). The establishment of a solid policy framework (Ahmad, 2015), the embedding of green culture through learning strategies and behavioral change interventions (Meachern et al., 2020), as well as providing incentives and putting in resources such as financial resources and others, are all things that will help to improve green HRM practices in Patan Industrial Estate (Nath and Goel, 2016).

The respondents' level of education is noteworthy in the survey, with 42 percent having a bachelor's degree, indicating good factors for the implementation of green HRM practices. The educated workforce promotes the skills, knowledge, understanding, values and action essential to create sustainable world (Kioupi and Voulvoulis, 2019). Making business more sustainable and also green working environment requires educated human resources that ensures sustainable use of resources, environmental protection and conversation, carbon emission, green initiatives etc. (Nikolic et al. 2020). A pool of educated human resources is required to transition to a greener economy and going green. For the successful implementation of environmental practices and green initiatives the educated workforce is an essential ingredient for an organization (Silva and Pownall, 2014).

Another eminent issue in green HRM adaptation is ISO 14000 series certification (Gupta and Racherla 2016). ISO 14000 series is regarded as the first step for greening the organization. The ISO 14000 series certification has a favorable influence on a company's environmental and economic performance (Ana et al., 2011). It integrates environmental improvement into all aspects of a company's operations and provides a systematic way to dealing with environmental challenges and demonstrates that it takes environmental stewardship seriously (Ana et al., 2011). The result of this study revealed that 90% of the industries in Patan Industrial Estate were not ISO 14000 series certified. The finding in this research is not in line with the several studies conducted in various countries and this level of ignorance on environmental management discipline tends to distance themselves from any environmental sustainability efforts and greening activities within the Industries. The government should provide incentives for companies to implement EMS voluntarily as it encourages companies to be environmentally responsible (Blok et al. 2015). The implementation of "Green Tax" functions as a positive reward, ensuring that businesses behave properly toward the environment. The findings of this study revealed that 90% of industries think that the existing technology is not sufficient for the adoption of Green HRM practices. It is eminent that majority of industries should modernize their infrastructure and use modern technologies. In recent times, there has been significant application of green technologies (Mishra et al., 2014; Bangwal and Tiwari, 2015) such as teleconferencing, virtual interviews, recycling, paperless office, telecommunication, online training, energy-efficient office, electronic filing, car-sharing etc. by various organization which helped to reduce the carbon foot prints (Pham et al., 2019). The Green intellectual capital, HR inventions (Trivedi, 2015), by adopting various environmental management techniques and upgrading infrastructures has helped organization to achieve sustainable competitive advantage (Yusoff et al., 2020), cost saving and fulfilling corporate social

responsibilities. The finding of the hypothesis stated that Green HRM positively and significantly affects employees green Behavior. Previous research has discovered a significant association between Green HRM and EGB. (Dumont et al., 2016; Saeed et al., 2019). Aboramadan (2020) revealed that Green HRM was a significant predictor of employees in-role and Ex-role green behavior. Fawehinmi et al. (2020) states Good Green HRM practices motivate employees to carryout Employees Green Behavior, so it is critical that Green HRM to be implemented successfully.

The study has identified some of the challenges in adoption of Green HRM practices in Patan Industrial estate like staff resistance & provoking thinking, understanding Green policies, lack of Modern infrastructure & management support. Creating green working culture etc were the most eminent challenges in adoption of Green HRM practices. The finding of in the research aligned with several studies conducted in developed and developing countries within diverse industries sector. The study conducted by Oyedokun (2019) which revealed that HR perceptions on green initiatives, lack of management support, lack of alignment between the HR strategy and overall strategy and vision of the organization, employees, employees and shareholder's perceptions (Islam et al., 2019), attitudes & behaviors, lack of adequate resources (financial & human), lack of internal capacity and knowledge etc were some challenges confronted in adoption and implementing green HRM practices in organization. Fayyazi et al. (2015) explained that most significant impediments were a lack of a detailed framework for implementing Green HRM and imprecise green values. In a nutshell, in Nepalese organizations, the idea of HRM has still not been well developed and implemented in the way it has evolved and been practiced in some developed countries (Gnawali, 2018). Thus, at present, 10 percent of Nepali organizations follow HRM practices effectively and have well documented HR policies. Due to the lack of understanding among top-level management, lack of successful people management patterns in the country and centralized organizational structure, HRM activities are still in a primitive stage in the rest of the Nepalese organizations(Sharma and Gautam, 2018). Nepal is marching forward towards globalization with integrated economy and the slogan of sustainable development and CSR can be heard in Nepalese organization and in government policy. HRM practices in Nepalese organization needs rapid and continual transition and the culture of adopting modern HRM policies and strategies should be developed. As Nepal is moving towards globalization, many MNCs are operating in Nepal have been practicing HRM at exceptional level. Hence, there is a need of sustainable development and CSR in the organization of Patan.

4.1. Contribution of the study

Theoretical contribution: In spite of paucity of literature available about green HRM, it has theoretical implication for making it a more known concept in literature. It contributes theoretically by making the existing literature more structured by offering an overview of green HRM practices. For this the AMO theory purposed by Fawehinmi et al. (2020) is tested in Nepalese context, and it is applied in industrial sector. Like theoretical contribution, researchers add to the literature on green HRM by demonstrating the link between organizational environmental culture and green HRM, as well as the link between green HRM and environmental performance. Similarly, this study reviewed various literatures in relation to green HRM and associated concept by several authors to make the study more comprehensive. With the support of literature, this study performed empirical study from a developing economy based in South Asia. This contributes to a better understanding of managers' adoption of Green HRM practices by examining the connection between HRM practices and environmental effectiveness.

Practical contribution: This study follows Structural Equation Modeling to analyze inferential statistics. It is not widely used for green HRM related research, so this model adds empirical study for further study. The mediation analysis is not observed in green HRM related studies. This study contributes

mediation analysis and it could be one of the interests for further studies planning for green HRM related issues. This study will guide policy makers and even government in shaping the pro-environmental behaviors of employees and integrating environmental management system in the HR functions. It can also help policymakers to adopt the advantages of employees' talents and knowledge in finding solutions to workplace environmental challenges. This study can assist managers and organizations in determining whether or not to implement green HRM and to explore the most significant practice. Furthermore, this study provides new ideas to HR managers who are unfamiliar with green HRM. Also, this study can play eminent role for National and International organization working of Green HRM, sustainability and environmental concerns. Despite the fact that this research was carried out in the Patan Industrial Estate, it has implications for an environmentally friendly workplace in general. The conclusion of this study is based on the assumption that having green oriented manpower in a corporation is critical in addressing global climate challenges and reducing carbon footprints. The necessity of implementing proper green HRM practices was underlined in this study, as it promotes employees' awareness and understanding of environmental issues and how to handle them. The analysis of the challenges and managerial solution provided by the respondents in the study play a crucial role in further improvement in the actions of government and organizations in the adoption of green HRM practices and environmental management.

5. CONCLUSION

This research examines the impact of green HRM on employees' green behavior through the mediation of environmental knowledge of managers in Patan Industrial Estate. The Census method was used for data collection from all 113 industries and primary data was collected through Interview method with the help of structured questionnaire. In order to scrutinize and analyze the study data in details, descriptive and inferential analysis were used through Structured Equation Model (SEM). This study suggests that effective green HRM practices can generate the environmental knowledge that in turn affect employees' green behavior. Thus, green HRM is essential in the successful implementation of environmental management system. The findings of the study may be utilized to develop various strategies that lead to long-term development and environmental protection. Though the green movement and Green HR are still in their infancy, increasing awareness of the importance of green issues within organizations has compelled them to embrace environmentally friendly HR practices, with a particular focus on waste management, recycling, reducing carbon footprint, and using and producing green products. Clearly, the bulk of the workers are concerned about the environment. HR managers are responsible for raising Green HRM awareness among the organization's youth and employees. Green HRM aids in beneficial outcomes such as gaining a first mover advantage, and many firms may get a competitive advantage by establishing a brand image as an environmentally conscientious organization. Hence, green concepts and practices are becoming increasingly relevant in many businesses and inside the HR professional's domain. HR executives, as champions of business culture and policy, are crucial in instilling in each employee a feeling of responsibility toward a sustainable Green HRM. However, further change is required to ensure that people and organizations make the necessary transition to a greening process in all of their operations. Based on the findings, the following suggestions are recommended as a recipe of Green HRM for better understanding of Green HRM practices for people, policy makers, organizations, industries and government:

- **Revising vision, mission and organization policies:** The study exposed that Green HRM practices significantly affect employees' green behavior. Green philosophy should be mentioned explicitly in the vision, mission statement & strategic plan of the organizations to stimulate pro-environmental behaviors. Industries should develop solid green policy framework by incorporating all the divisions so that Green HRM is taken seriously and professionally. Thus, incorporating

appropriate Green clause and guidelines assist in developing employees' awareness and knowledge, and to tackle them which will result in successful environmental performance. Patan Industrial Estate should take integrative approach for incorporating environmental management system and coordinate with various industries with the issues of sustainability.

- **Ensuring ISO 1400 series certification:** ISO 14000 series certification incorporates environmental management system and it matters for encouraging organization to take measures to enhance environmental performance in number of areas. The finding of the study revealed that 90% of the industries were not ISO 14000 series certified. Thus government, provincial government and Patan Industrial Estate should develop appropriate plans and policies that encourage industries for ISO 14000 series certification. As a result, the management of the Patan Industrial Estate should design strict rules, policies, and compliances on green HRM matters, that serve as a watchdog for any industries who failed to apply green motives and initiatives in their organization.
- **Advancement of infrastructure and technology:** One of the huddles for effective practice of Green HRM and environmental management in Patan Industrial Estate was lack of advanced infrastructures and technologies. In this study, most of the respondents stated that existing technology is not sufficient for the adoption of Green HRM practices. For the advancement of infrastructures and technologies, Patan Industrial Estate is the key player to bring policies and plans to execute them properly. They should provide tax rebate, tax holidays, subsidies for the advancement of technologies that serve as the foundation for sustainability, CSR and stimulating green working culture and pro-environmental behaviors.
- **Enhancement of green HRM practices:** The findings revealed that majority of the industries and their various divisions have moderate comprehensions of what green HRM is about. As a result there is minimal application of green HRM principles in HR. The establishment of a solid policy framework, the embedding of green culture through learning strategies and behavioral change interventions, as well as providing incentives and putting in resources such as financial resources and others help to improve green HRM practices in Patan Industrial Estate. Incorporation of GHRM practices such as GRS, GTD, GRC, GIP, GPM contribute significantly to influence employees' green behaviors.
- **Providing Trainings and Empowering Employees:** The findings of this research revealed that employees' engagement, trainings and awareness programs on green issues are very important to ensure successful implementation of green HRM practices. Patan Industrial Estate requires to provide environmental trainings and education to the employees as these are crucial activities in changing attitudes and behaviors, and acquiring new skills. This step will enhance environmental knowledge of employees that amplify in successful adoption of green HRM practices. Employees who come up with green ideas should be praised and rewarded and should be free to share ideas with one another at all levels. "Green Allowance" should be added to those employees who contribute to environmental practices in their organization through innovation. It is suggested that companies willing to go green should adopt a culture of learning. Every employee must be consulted, engaged and involved for making green projects to be successful. This will help them to show their interest, enthusiasm, passion, and commitment to the greening efforts.
- **Proactive government initiatives:** The Nepalese government can also play a constructive role in speeding up changes to tackle climate change and decarbonizing the economy. Various skill development centers relating to workforce training, particularly in the areas of environmental management, sustainable energy, waste recycling, waste energy generation, e-waste management,

clean technologies, and so on, should be established. Tax holidays can be given to those organizations willing to adopt environmental management system, green HRM practices and ISO 14000 series certification in their organization. Green taxes on polluting and non-green businesses should be implemented by the government. They should establish a green advisory for industry and public.

Thus, this study emphasizes on understanding of green HRM practices by the managers at Patan Industrial Estate. It has touched on a few aspects of green HRM, but it does have several shortcomings. First, this study was conducted in 113 Industries in Patan Industrial Estate, hence, the findings of this study cannot be generalized to other industrial estates of Nepal due to varying organization structure and funding. The further researches should try to cater other Industrial Estate of Nepal too so that it can create more clear picture about green HRM practices in other parts of the country. Finally, because of the diverse cultural contexts, the results of this study cannot be applied to other countries; as a result, caution should be exercised when interpreting the study's findings and conclusions. The relationship between green HRM and EGB did not mediate by environmental knowledge. Nonetheless, the significance of other variables in explaining the mechanism of the relationship between Green HRM and EGB must be determined. Future research can incorporate additional factors: self-efficacy and environmental concern, and a mediation function between Green HRM and EGB, to better understand the underlying link between green HRM and EGB. In this study the cost benefit analysis of Green HRM practices that economizes the total cost of the organization were not included and analyzed.

REFERENCES

- Aboramadan, M. (2020). The effect of green HRM on employee green behaviors in higher education: the mediating mechanism of green work engagement. *International Journal of Organizational Analysis*, 30(1), 7-23.
- Ahmad, S. (2015). Green human resource management: Policies and practices. *Cogent Business and Management*, 2(1), 1–13. <https://doi.org/10.1080/23311975.2015.1030817>
- Ahmad, S., Islam, T., Sadiq, M., & Kaleem, A. (2021). Promoting green behavior through ethical leadership: a model of green human resource management and environmental knowledge. *Leadership & Organization Development Journal*, 42(4), 531-547.
- Ana, G. E., Zailani, S., & Wahid, N. A. (2011). A study on the impact of environmental management system (EMS) certification towards firms' performance in Malaysia. *Management of Environmental Quality: An International Journal Article Information*, 17(1), 79–93. <https://doi.org/https://doi.org/10.1108/14777830610639459>
- Arulrajah, A. A., & Opatha, H. H. D. N. P. (2016). Analytical and theoretical perspectives on green human resource management: A simplified underpinning. *International Business Research*, 9(12), 153. <https://doi.org/10.5539/ibr.v9n12p153>
- Bangwal, D., & Tiwari, P. (2015). Green HRM – A way to greening the environment. *IOSR Journal of Business and Management Ver. I*, 17(12), 2319–7668. <https://doi.org/10.9790/487X-171214553>
- Bauer, T., & Aiman-Smith, L. (1996). Green career choices: The influence of ecological stance on recruiting. *Journal of Business and Psychology*, 10(4), 445–458. <https://doi.org/10.1007/bf02251780>
- Berawi, M. A., Miraj, P., Windrayani, R., & Berawi, A. R. B. (2019). Stakeholders' perspectives on green building rating: A case study in Indonesia. *Heliyon*, 5(3), e01328. <https://doi.org/10.1016/j.heliyon.2019.e01328>
- Bilan, Y., Oliinyk, O., Mishchuk, H., & Skare, M. (2023). Impact of information and communications technology on the development and use of knowledge. *Technological Forecasting and Social Change*, 191, 122519. DOI: 10.1016/j.techfore.2023.122519
- Blahová, M., Haghirian, P., Pálka, P., & Urbánek, T. (2022). Global performance strategies in leading Japanese automotive organisations. *Journal of International Studies*, 15(4), 93-111. doi:10.14254/2071-8330.2022/15-4/6
- Blok, V., Wesselink, R., Studynka, O., & Kemp, R. (2015). Encouraging sustainability in the workplace: A survey on the pro-environmental behaviour of university employees. *Journal of Cleaner Production*, 106, 55–67.

- <https://doi.org/10.1016/j.jclepro.2014.07.063>
- Bos-Nehles, A. C., Van Riemsdijk, M. J., & Kees Looise, J. (2013). Employee perceptions of line management performance: Applying the AMO theory to explain the effectiveness of line managers' HRM implementation. *Human Resource Management, 52*(6), 861–877. <https://doi.org/10.1002/hrm.21578>
- Bunge, J., Cohen-Rosenthal, E., & Ruiz-Quintanilla, A. (1995). Employee participation in pollution reduction: Preliminary analysis of the Toxics Release Inventory. *Journal of Cleaner Production, 4*(1), 9–16. [https://doi.org/10.1016/S0959-6526\(96\)00006-6](https://doi.org/10.1016/S0959-6526(96)00006-6)
- Cabral, C., & Lochan, R. D. (2019). Green competencies: Construct development and measurement validation. *Journal of Cleaner Production, 235*, 887–900. <https://doi.org/10.1016/j.jclepro.2019.07.014>
- Chaudhary, R. (2020). Green human resource management and employee green behavior: An empirical analysis. *Corporate Social Responsibility and Environmental Management, 27*(2), 630–641. <https://doi.org/10.1002/csr.1827>
- Cheema, S., Pasha, A. T., & Javed, F. (2015). Green human resource practices : Implementations and hurdles of SMEs in Pakistan. *Journal of Business Studies, 7*(2), 231–241.
- Chih, H. L., & Sapphire, L. (2017). Systems theory. *The International Encyclopedia of Organizational Communication*, 1–18. <https://doi.org/10.1002/9781118955567.wbieoc203>
- Citta, A. B., & Fattah, H. (2020). Implementation of green human resource management based on triple bottom line theory to support sustainability development (study at PT. Semen Tonasa, South Sulawesi). *IOP Conference Series: Earth and Environmental Science, 575*(1), 1–6. <https://doi.org/10.1088/1755-1315/575/1/012183>
- Cooper, D. R. (2014). Sustainability is the key driver of innovation. *71st World Foundry Congress: Advanced Sustainable Foundry, WFC 2014*, 57–64.
- Daily, B., & Huang, S. (2001). Achieving sustainability through attention to human resource factors in environmental management. *International Journal of Paediatric Dentistry, 11*(5), 321–321. <https://doi.org/10.1046/j.0960-7439.2001.00313.x>
- Devkota, N., Rana, M., Parajuli, S., Bhandari, U., & Paudel, U. R. (2022). Employers' Perception towards Need of Profession Skills in MBA Graduates: Evidence from Ordered Logistic Regression. *Journal of Business and Management, 6*(1), 1-17.
- Dumont, J., Shen, J., & Deng, X. (2016). EFFECTS of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human Resource Management, 45*(1), 127–145. <https://doi.org/10.1002/hrm>
- Fawehinmi, O., Yusliza, M. Y., Wan Kasim, W. Z., Mohamad, Z., & Sofian Abdul Halim, M. A. (2020). Exploring the interplay of green human resource management, employee green behavior, and personal moral norms. *SAGE Open, 10*(4), 1–18. <https://doi.org/10.1177/2158244020982292>
- Fayyazi, M., Shahbazmoradi, S., Afshar, Z., & Shahbazmoradi, M. R. (2015). Investigating the barriers of the green human resource management implementation in oil industry. *Management Science Letters, 5*(1), 101–108. <https://doi.org/10.5267/j.msl.2014.12.002>
- Gholami, H., Rezaei, G., Saman, M. Z. M., Sharif, S., & Zakuan, N. (2016). State-of-the-art Green HRM System: Sustainability in the sports center in Malaysia using a multi-methods approach and opportunities for future research. *Journal of Cleaner Production, 124*, 142–163. <https://doi.org/10.1016/j.jclepro.2016.02.105>
- Ghouri, A. M., Mani, V., Khan, M. R., Khan, N. R., & Srivastava, A. P. (2020). Enhancing business performance through green human resource management practices: An empirical evidence from Malaysian manufacturing industry. *International Journal of Productivity and Performance Management, 69*(8), 1585–1607. <https://doi.org/10.1108/IJPPM-11-2019-0520>
- Gnawali, A. (2018). Human resource development practices: Empirical evidence from Nepal Rastra Bank. *Kathford Journal of Engineering and Management, 1*(1), 57–63. <https://doi.org/10.3126/kjem.v1i1.22024>
- Grant, D. S., Bergesen, A. J., & Jones, A. W. (2002). Organizational size and pollution: The case of the U.S. chemical industry. *American Sociological Review, 67*(3), 389–407. <https://doi.org/10.2307/3088963>
- Gupta, S. K., & Racherla, U. S. (2016). Effect of ISO 14000 certification on sustainability: Evidence from the Indian leather industry. *Journal of Social, Political, and Economic Studies, 41*(1), 34–50.
- Gupta, S. K., & Racherla, U. S. (2016). Effect of ISO 14000 certification on sustainability: Evidence from the Indian leather industry. *Journal of Social, Political, and Economic Studies, 41*(1), 34–50.

- Hair, J. F., William, B. ., Babin, B. ., & Anderson, R. . (2018). Multivariate data analysis. In *Routledge*.
<https://doi.org/10.4324/9781351269360>
- Holotová, M., Nagyová, L., & Holota, T. (2020). The impact of environmental responsibility on changing consumer behaviour – sustainable market in Slovakia. *Economics and Sociology*, 13(3), 84-96. doi:10.14254/2071-789X.2020/13-3/6
- Ishtiaque, A., Shrestha, M., & Chhetri, N. (2017). Rapid urban growth in the Kathmandu valley, Nepal: Monitoring land use land cover dynamics of a himalayan city with landsat imageries. *Environments - MDPI*, 4(4), 1–16. <https://doi.org/10.3390/environments4040072>
- Islam, M. A., Jantan, A. H., & Hashim, H. (2019). Exploring challenges and solutions in applying green human resource management practices for the sustainable workplace in the ready-made garment industry in Bangladesh. *Business Strategy & Development*, 3(3), 332–343. <https://doi.org/10.1002/bsd2.99>
- Jackson, S. E., & Seo, J. (2011). The greening of strategic HRM scholarship. *Organisation Management Journal*, 7(4), 278–290. <https://doi.org/10.1057/omj.2010.37>
- Jeronimo, R. J. M., Florez-Lopez, R., & Araujo-Pinzon, P. (2019). Resource-based view and SMEs performance exporting through foreign intermediaries: The mediating effect of management controls. *Sustainability* (, 11(12), 1–26. <https://doi.org/10.3390/SU11123241>
- Johnson, R. D., & Gueutal, H. G. (2017). Transforming HR through technology: The use of E-HR and HRIS in organizations. In *SHRM Foundation's Effective Practical Guidelines Series*. www.shrm.org/foundation.
- Kamili, S. (2018). Green HRM: Origin, practices and implications. *1st International Conference on Recent Development in Science, Humanities and Management*, 524.
- Khanal, G., Shrestha, R., Devkota, N., Sakhakarmy, M., Mahato, S., Paudel, U. R., ... & Khanal, C. K. (2023). An Investigation of Green Supply Chain Management Practices on Organizational Performance Using Multivariate Statistical Analysis. *Supply Chain Analytics*, 100034.
- Kim, Y. J., Kim, W. G., Choi, H. M., & Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management*, 76, 83–93. <https://doi.org/10.1016/j.ijhm.2018.04.007>
- Kioupi, V., & Voulvoulis, N. (2019). Education for sustainable development : A systemic framework for connecting the SDGs to educational outcomes. *Sustainability*, 11(21), 1–18.
- Koshish, J. (2019). *Green HRM : People management commitment to environmental sustainability*. In *proceedings of 10th international conference on digital strategies for organizational success*. 1332–1346.
- Lei, S., Akram, T., Haider, M. J., Hussain, S. H., Ali, M., & Hussain, S. T. (2018). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation and Knowledge*, 3(3), 123–127. <https://doi.org/10.1016/j.jik.2016.07.002>
- Mamum, M. A. (2019). An analysis of employee awareness on green human resource management practices: Evidence from Bangladesh. *Human Resource Management Research*, 9(1), 14–21. <https://doi.org/10.5923/j.hrmr.20190901.03>
- Mandago, R. J. (2019). *influence of green human resources management practices on environmental sustainability services based State Corporations in Kenya*. ir.jkuat.ac.ke
- Mandip, G. (2012). Green HRM: People management commitment to environmental sustainability. *Research Journal of Recent Sciences*, 11(12), 244–252. <https://doi.org/10.3390/SU11123257>
- Markey, R., McIvor, J., O'Brien, M., & Wright, C. F. (2019). Reducing carbon emissions through employee participation: Evidence from Australia. *Industrial Relations Journal*, 50(1), 57–83. <https://doi.org/10.1111/irj.12238>
- Mathapati, C. M., & Nelson, G. (2013). Green HRM: A strategic facet. *Tactful Management Research Journal*, 2(2), 1–6.
- Mathews, H. M., Rodgers, W. J., & Youngs, P. (2017). Sense-making for beginning special educators: A systematic mixed studies review. *Teaching and Teacher Education*, 67, 23–36. <https://doi.org/10.1016/j.tate.2017.05.007>
- Mcabee, J. (2021). *Understanding stakeholder theory*. Wrike.
- Mceachern, M. G., Middleton, D., & Cassidy, T. (2020). Encouraging sustainable behaviour change via a social practice approach : A focus on apparel consumption practices. *Journal of Consumer Policy*, 43(2), 397–418.
- Meinzen-dick, R., Kovarik, C., & Quisumbing, A. R. (2014). Gender and sustainability. *Annual Review of Environment*

- and Resources*, 39, 29–55. <https://doi.org/10.1146/annurev-environ-101813-013240>
- Miraj, H. M., Md., A., & Rashedul, I. (2019). Green human resource practices in Bangladesh : A Study on Banking Sector. *The Jahangirnagar Journal of Business Studies*, 7(1), 81–97.
- Mishchuk, H., Bilan Y., Androniceanu, A. & Krol, V. (2023). Social capital: Evaluating its roles in competitiveness and ensuring human development. *Journal of Competitiveness*, 15(2), 1-17.<https://doi.org/10.7441/joc.2023.02.01>
- 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. <https://doi.org/10.1108/IJOA-11-2016-1079>
- Mishra, R. K., Sarkar, S., & Kiranmai, J. (2014). Green HRM: Innovative approach in Indian public Enterprises. *World Review of Science, Technology and Sustainable Development*, 11(1), 26–42. <https://doi.org/10.1504/WRSTSD.2014.062374>
- Moraes, S. de S., Chiappetta Jabbour, C. J., Battistelle, R. A. G., Rodrigues, J. M., Renwick, D. S. W., Foropon, C., & Roubaud, D. (2019). When knowledge management matters: Interplay between green human resources and eco-efficiency in the financial service industry. *Journal of Knowledge Management*, 23(9), 1691–1707. <https://doi.org/10.1108/JKM-07-2018-0414>
- Mtembu, V. N. (2017). *Green human resource management towards sustainable organizations: A case of KwaZulu-Natal higher education institutions*.
- Mwita, K. M. (2019). Conceptual review of green human resource management. *East African Journal of Social and Applied Sciences (EAJ-SAS)*, 1, 13–20.
- Nath, V., & Goel, A. (2016). A study of green human resource management and its relationship with employee motivation, job satisfaction and organizational commitment. In *Bvimr.Com*.
- Nikolic, N., Cvetkovic, V., Zecevic, M., Mano, R., & Milasinovic, S. (2020). Human resource management in environmental protection in Serbia. *Bulletin of the Serbian Geographical Society*, 100(1), 51–72. <https://doi.org/10.2298/GSGD2001051N>
- Oyedokun, O. O. (2019). *Green human resource management practices (GHRM) and Its effect on sustainable competitive edge in the Nigerian manufacturing industry*. <https://esource.dbs.ie/handle/10788/3829>
- Pallavi, E., & Bhanu, M. (2016). Green HRM: A way for corporate sustainability. *International Journal of Human Resource Management and Research (IJHRMR)*, 6(2), 13–20. <http://www.tjprc.org/view-archives.php>
- Pant, P. R., & Dongol, D. (2009). Kathmandu valley profile: Briefing paper. *Governance and Infrastructure Development Challenges in Kathmandu Valley*, 18(3), 1–13.
- Papania, L., & Papania, D. (2010). Embedding sustainability in organizational culture. In *Network for Business Sustainability*.
- Parker, S. L. (2011). Sampling versus census : A comparative analysis. In *TNS Employee Insights Report*.
- Pham, N. T., Hoang, H. T., & Phan, Q. P. T. (2019). Green human resource management: A comprehensive review and future research agenda. *International Journal of Manpower*, 41(7), 845–878. <https://doi.org/10.1108/IJM-07-2019-0350>
- Prasad, R. S. (2013). Green HRM : Partner in sustainable competitive growth. *Journal of Management Sciences And Technology*, 1(1), 15–18.
- Rahoo, A. L., & Ali Khan, M. (2020). Analysis of green HR practices in information technology industries of Pakistan. *Disaster Recovery Bus.Contin*, 11(1), 2105–2113. <https://www.researchgate.net/publication/342509796>
- Rajbhandari, S., Devkota, N., Khanal, G., Mahato, S., & Paudel, U. R. (2022). Assessing the industrial readiness for adoption of industry 4.0 in Nepal: A structural equation model analysis. *Helixyon*, 8(2), 1-11.
- Ramasamy, A., Inore, I., & Sauna, R. (2017). A study on implications of implementing green HRM in the corporate bodies with special reference to Developing Nations. *International Journal of Business and Management*, 12(9), 117. <https://doi.org/10.5539/ijbm.v12n9p117>
- Rani, S., & Mishra, K. (2014). Green HRM : Practices and strategic implementation in the organizations. *International Journal on Recent and Innovation Trends in Computing and Communication*, 2(11), 3633–3639.
- Ren, S., Tang, G., & E. Jackson, S. (2018). Green human resource management research in emergence: A review and future directions. *Asia Pacific Journal of Management*, 35(3), 769–803. <https://doi.org/10.1007/s10490-017-9532-1>

- Ren, S., Tang, G., & Jackson, S. E. (2017). Green human resource management research in emergence : A review and future directions. *Asia Pacific Journal of Management*, 35(3), 769–803. <https://doi.org/10.1007/s10490-017-9532-1>
- Renwick, D. W. S., Redman, T., & Maguire, S. (2013). Green human resource amnagement: A review and research agenda. *International Journal of Management Reviews*, 15(1), 1–14. <https://doi.org/10.1111/j.1468-2370.2011.00328.x>
- Saeed, B. Bin, 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(2), 424–438. <https://doi.org/10.1002/csr.1694>
- Saifulina, N., Carballo-penela, A., & Ruzo-sanmartín, E. (2020). Sustainable HRM and green HRM: The role of green HRM in influencing employee pro-environmental behavior at work. *Journal of Sustainability Research*, 2(3), 2–25. <https://doi.org/10.20900/jsr20200026>
- Sharma, Sanjeev, & Gautam, N. (2018). The changing HR dynamics in Nepal. *New Business Age*, 1–22.
- Shen, J., Dumont, J., & Deng, X. (2018). Employees' perceptions of green HRM and non-green employee work outcomes: The social identity and stakeholder perspectives. *Group and Organization Management*, 43(4), 594–622. <https://doi.org/10.1177/1059601116664610>
- Shrestha, S., Devkota, N., Paudel, U. R., Bhandari, U., & Parajuli, S. (2020). Bankers' communication know-how: An analysis from commercial banks of Kathmandu valley. *Quest Journal of Management and Social Sciences*, 2(1), 66–80. <https://doi.org/10.3126/qjmss.v2i1.29023>
- Silva, D. G., & Pownall, R. A. J. (2014). Going green: Does it depend on education, gender or income? *Applied Economics*, 46(5), 573–586. <https://doi.org/10.1080/00036846.2013.857003>
- Trivedi, A. (2015). Strategic green HRM: A necessity of 21st Century. *International Journal of Business Quantitative Economics and Applied Management Research*, 2(2), 34–43.
- Twenge, J. M. (2010). A review of the empirical evidence on generational differences in work attitudes. *Journal of Business and Psychology*, 25(2), 201–210. <https://doi.org/10.1007/s10869-010-9165-6>
- Victor, D. G. (2011). The collapse of the Kyoto protocol and the struggle to slow global warming. *IEEE Spectrum*, 38(7), 78. <https://doi.org/10.1109/MSPEC.2001.931889>
- Vo, H. D., Van, T. H. L., Dinh, T. H. L., & Ho, M. C. (2020). Financial inclusion, corporate social responsibility and customer loyalty in the banking sector in Vietnam. *Journal of International Studies*, 13(4), 9-23. doi:10.14254/2071-8330.2020/13-4/1
- Wagner, M. (2011). Environmental management activities and sustainable HRM in German manufacturing Firms - Incidence, determinants, and outcomes. *German Journal of Human Resource Management: Zeitschrift Für Personalforschung*, 25(2), 157–177. <https://doi.org/10.1177/239700221102500206>
- Wehrmeyer, W. (1996). *Greening people: Human resources and environmental management*. Routledge.
- Xavier, C., & William, F. M. (2017). *The innovation paradox*.
- Xie, J., & Buavaraporn, N. (2019). Exploring the relationships of green human resources management (GHRM) and out comes of green supply chain management (GSCM): Emprical evidence from resource-oriented. 11(2), 53–79.
- Yusoff, Y. M., Nejadi, M., Kee, D. M. H., & Amran, A. (2020). Linking green human resource management practices to environmental performance in hotel industry. *Global Business Review*, 21(3), 663–680. <https://doi.org/10.1177/0972150918779294>
- Zelezny, L. C. (2000). *Elaborating on gender differences in environmentalism*. 56(3), 443–457.
- Zhang, Y., Luo, Y., Zhang, X., & Zhao, J. (2019). How green human resource management can promote green employee behavior in China: A technology acceptance model perspective. *Sustainability (Switzerland)*, 11(19). <https://doi.org/10.3390/su11195408>
- Zibarras, L. D., & Coan, P. (2015). HRM practices used to promote pro-environmental behavior: a UK survey. *International Journal of Human Resource Management*, 26(16), 2121–2142. <https://doi.org/10.1080/09585192.2014.972429>
- Zoogah, D. B. (2001). The dynamics of green HRM behaviors: A cognitive social information processing approach. *German Journal of Human Resource Management*, 25(2), 117–139. <https://doi.org/10.1177/239700221102500204>