GREEN HUMAN RESOURCE MANAGEMENT: A SYSTEMATIC LITERATURE REVIEW

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Résumé — Avec la prise de conscience croissante de la protection de l’environnement comme l’une des priorités les plus urgentes, les organisations ont commencé d’intégrer des activités environnementales dans toutes les fonctions organisationnelles. La gestion des ressources humaines en tant que fonction organisationnelle importante s’engage, de sa part, dans des pratiques liées à la protection de l’environnement et au maintien de l’équilibre écologique. Ainsi, la gestion verte des ressources humaines (GVRH) est la tendance actuelle de la recherche sur la GRH et a attiré l’attention de plusieurs chercheurs et praticiens.


Mots-clés — Revue de littérature systématique, gestion verte des ressources humaines, pratiques de gestion verte des ressources humaines, gestion environnementale des ressources humaines
Abstract — With the growing awareness of environmental protection as one of the most critical priorities, organizations have begun to integrate environmental activities into all organizational functions. Human resources management as an important organizational function is, in turn, engaged in practices related to environmental protection and preservation of the ecological balance. Thus, Green Human Resource Management (GHRM) is the latest trend in HRM research and has attracted the attention of many researchers and practitioners. However, there is still a lack of systematic research aimed at analyzing knowledge on green human resource management. The purpose of this study is to systematically review the research conducted in this field in order to provide a general reflection on the current state of knowledge. Our research identified 148 research papers published in credible databases covering the period 2000–2020. This research provides an important contribution by providing a broad and rigorous review of the definitions, practices, challenges, antecedents and consequences of green human resource management. Finally, this research provides a roadmap for future research.

Keywords — systematic literature review, green human resource management, green HRM practices, environmental HRM

I. Introduction

Sustainability is becoming a global issue. The business world has turned out to be progressively aware of the enormous potential of green structures in the management of ecological problems (Jyoti, 2019). Thus, the increasing environmental concerns around the world has led companies to adopt environmental practices at an increasing rate, and such adoptions could possibly enhance the likelihood of a firm’s sustainability (Yong & al., 2019).

With this growing awareness related to the environment as well as the current environmental regulations, companies have started to design environmentally friendly strategies, formulate green policies, and transform their operations in an environmentally friendly manner. Hence, Green human resource management (GHRM) has emerged as a proactive environmental management system as well as a new research trend that is primary rather than merely desirable (Jahan and Mamin Ullah, 2016; Jabbour and Santos, 2008). The importance of GHRM lies in its ability to increase staff awareness of environmental concerns, influence their attitudes, behaviors, knowledge and skills regarding environmental protection (Dumont & Al. 2016).

GHRM includes the design and implementation of HRM practices, policies, and philosophies to support organizational goals related to environment, stimulate attitudinal and behavioral change and improve environmental performance (Ren & Al., 2018).

Despite the fact that research on GHRM is gaining heightened attention (Yong & al., 2019), there is a lack of systematic literature reviews to underpin the valuable knowledge and findings
achieved by researchers (Arulrajah & Opatha, 2016). Pham & al., (2019) state that there is still a lack of literature review providing a holistic overview capable of advancing a framework for future research.

Based on these premises, this paper aims to analyze GHRM based on the theoretical and empirical research conducted by scholars in the field. We will identify relevant GRHM literature from 2000 to 2020, analyze these researches, identify research gaps as well as present a new agenda for future research.

We reviewed 148 articles collected from various online databases namely, Sage journals, Taylor and Francis Online, Springerlink, ScienceDirect, JSTOR, Wiley Online Library, Emerald insight, Scopus, Web of Science, Google Scholar, Hal and Researchgate. Thus, we aim to:

1. Present, in chronological order, the evolution of the GHRM concept.
2. Discuss GHRM in a broad context: antecedents, consequences, and challenges.
3. Shed light on the adopted theoretical frameworks, research fields, year of publication and national contexts.
4. Identify the basic functions of Green HRM practices identified so far.
5. To present, based on the identified research gaps, directions for future research.

This article is organized as follows: the first section describes the methodological protocol, the selection of articles and databases, and the classification of articles. The second section presents an analysis of GHRM research by years, national and continental context, applied methodologies and research fields. Then, the third section presents the content analysis of the articles and the classification of antecedents, challenges, consequences, HRM practices and the theoretical framework adopted. Finally, the fourth section presents the discussion of the results, the limitations, the implications of this research as well as research paths.
II. Review method

1) The protocol of work process

![Workflow diagram]

We developed our workflow following the PRISMA guidelines. First, we conducted our search in credible databases and in the bibliography of powerful articles in the field of GHRM. Second, we removed duplicate articles. Then article titles and abstracts were reviewed to exclude articles that were not related to our topic. Finally, we excluded articles based on a full-text review.

2) Timeframe for data selection

In this work and in accordance with our research objectives, a systematic review was used to precisely and systematically identify all relevant studies. The search was conducted in the first
stage between April 2020 and December 2020. The publication period chosen was between 2000 and 2020.

We chose the year 2000 as the starting point because the first article that was published after the publication of Whermeyer's 1996 book, is Revill, (2000) paper. The year 2020 was chosen as the end point to include the most recent and impactful publications.

We conducted this work by searching the appearance of a set of keywords in the titles, abstracts, and texts of the papers. These selected words are related to the topic of our research. We distinguish: "Green Human resource Management", "GHRM", "Green HRM", "Environmental HRM", "Environmental human resource management", "Green Human resource", "Green HRM practices", "Green human resource management practices".

We continued the search for articles by examining the bibliography of our included papers and also by searching for the works published by the most well-known authors in the field (Yong, J.Y.; Arulrajah, A. A.; Jabbour C.J.C.; Renwick, D.W.S.). This was done to avoid omissions in the search process and to ensure a better search result.

A list of 235 articles related to this topic was evaluated of which 148 were found to be more relevant to the scope of our research.

3) Selection of databases

This database selection step consists of finding the most appropriate and high-quality research works relevant to our research. We tried to build a complete and exhaustive database and develop a solid basis for our systematic literature review.

Our search was conducted in English and the articles cited in our work appear in the most reputable databases: Sage journals, Taylor and Francis Online, Springerlink, ScienceDirect, JSTOR, Wiley Online Library, Emerald insight, Scopus, Web of Science, Google Scholar, Hal and Researchgate.

4) Inclusion and exclusion criteria

As a first step, titles and abstracts were reviewed to assess the relevance of articles. Articles that appeared irrelevant to this study were eliminated. Next, duplicate articles were removed to avoid double counting an article in our analysis. The remaining articles were selected based on importance and rigor to ensure inclusion of the most impactful works. Each remaining article was carefully analyzed during the in-depth reading stage. We screened the articles based on the following inclusion and exclusion criteria:

Inclusion criteria:
Type of paper: literature review article, empirical research article, meta-analysis, systematic literature review and conference paper.

Objectives: All studies that focus on green human resource management.

Language: articles published in English on GHRM topics.

Exclusion criteria:

Type of paper: theses and dissertations.

Objectives: Any article that does not focus on environmental management and HRM in general and papers that focus on environmental performance, sustainable development, or green behavior but do not consider the human resources or HRM function. All studies that are not within the field of GHRM and fall under related but different themes such as "Sustainable HRM" and "Socially responsible HRM".

Language: all articles that are not in English were excluded (a search for articles in French was conducted but no articles were found).

5) Papers classification
To structure the selected database of 148 publications, a bibliographic list of all publications was elaborated, a file was created in an Excel spreadsheet and the results were analyzed to draw conclusions. The selected articles were classified according to the following criteria:

Article title, authors, year of publication, abstract, context (national and continental), research field, antecedents of GHRM, individual and organizational consequences of GHRM, challenges of GHRM, green human resource management practices/article, theoretical framework, research method, type of research (conceptual/theoretical or empirical), findings and definitions of GHRM/article.

This data management and classification was necessary to ensure a solid and comprehensive basis for this study. The results of our analysis were presented in the following sections.

III. Findings of papers analysis

1) Publication years
This research analyzes 148 publications since 2000, around the time when the green/environmental perspective emerged in the HRM context. However, during the initial period, the number of publications was extremely limited (between 2000 and 2014) as the concept of GHRM was new.
We examined the publication trends based on an examination of number of publications per year as illustrated in Figure 2. It appears that GHRM has gained heightened attention of researchers with 82 papers (55%) published between 2018 and 2020, 46 papers (31%) between 2017 and 2015, 13 papers (9%) between 2012 and 2014, and 7 papers (5%) in a period that extends from 2000 to 2011. This growing tendency takes a high peak and continues to be observed in recent years. In this way, the increasing number of research shows that GHRM, as a research area, is increasingly receiving the attention it deserves.

2) National and continental context
In the selected studies, the research context is presented in two graphical representations. The purpose is to provide an overview of the countries and continents with the most and least research attention to GHRM. Research on GHRM has been published in only 30 countries, based on the territory where the data were collected.
The 108 articles selected for this stage of analysis are empirical works. Figure 3 shows the number of publications by country. As presented, Malaysia, Pakistan, India and China are heading the number of published articles in the field of GHRM with fifty-three publications (49%), followed by Indonesia, Egypt, UK and Palestine with twenty articles (18%), Bangladesh, Italy and Jordan with nine articles (8%), finally, the remaining eighteen countries do not exceed two publications per country with a total of twenty-six articles (24%).

According to the continental distribution of the articles, the research was conducted in 17 Asian countries, 8 European countries, 1 North American country, 1 South American country and 3 African countries.

![Continental context diagram]

As shown in Figure 4, the Asian continent has the largest number of GHRM-related articles (82 publications: 76%). This result shows that publications from Asian countries such as, Malaysia, China, India and Pakistan, dominate our systematic map. Europe is in second position with 13 papers (11%). These articles were conducted mostly in the United Kingdom, Italy and Poland. The African continent has a limited number of articles (10 articles, 8%). The number of articles published on green human resource management is limited in three countries: Egypt, Kenya and South Africa. The two continents, North America and South America have only 3 articles published on the topic of GHRM (3%). one publication in Mexico and two publications in Brazil. The Oceanic continent has only one publication (1%) in Australia.

The findings from our contextual analysis show the existence of a huge geographical disparity in research on the field of green human resource management. This is illustrated by the fact that the African, Oceanian, and American continents have a small amount of research compared to the European and Asian context.

3) Used methodologies

The analysis in this subsection aims to investigate the methodological approach used by research on GHRM, it covers two dimensions:
- The first graph (Figure 5) represents the type of research (conceptual research or empirical research).
The second graph (Figure 6) represents the research approach (qualitative, quantitative or mixed).

![Figure 5: Type of research](image)

As shown in Figure 5, 40 Articles (27%) in our literature review are conceptual/theoretical articles, these articles attempt to define concepts, develop conceptual models, shed light on gaps in the current state of knowledge and outline future directions for research. In addition, 108 articles (73%) are empirical, the objective is either to explore barriers related to the implementation of GHRM or to test causal relationships where GHRM is antecedent, mediator or consequence. Based on the above findings, we can conclude that the majority of studies included in our literature review focus on empirical research.

Research on GHRM has been conducted using different methodological approaches. This study distinguishes between three research approaches used in the 108 empirical articles: quantitative, qualitative and mixed methods.

Quantitative approach: Figure 6 shows that the majority of articles 86 (80%) of the studies adopted the quantitative approach, these studies empirically examined the factors influencing the adoption of GHRM or the outcomes (individual or organizational). Structural equation modeling was the dominant choice for statistical analysis.

Qualitative approach: 12 articles (11%) used the qualitative approach. These qualitative studies explored factors related to GHRM implementation, attempted to identify GHRM best practices, focused mainly on understanding and analyzing green initiatives implemented by companies, or compared GHRM practices adopted among multiple firms.
Mixed approach: 10 articles (9%) used the mixed approach. The use of the mixed method in research on green human resource management remains very limited.

In general, based on our analysis, we note that most research articles on GHRM use a quantitative research method. Articles that choose qualitative and mixed methods have the lowest proportion. However, the limited number of qualitative and mixed methods research may have limitations on the discovery and development of innovative and in-depth knowledge about a phenomenon (Anlesinya & Susomrith, 2020).

4) Research field

In this subsection, we focused on the distribution of research articles by research field. We have distinguished the multi-sector surveys from the polluting industry to emphasize the researcher’s interest in industries with an environmental footprint. In the case of the multi-sector surveys, the researchers’ objective was to compare a variety of companies from different sectors without considering their environmental footprint.
Figure 7 reveals the sectorial focus of the studies, with the majority of multi-sector studies (22 papers: 20%), followed by the tourism sector (15 papers: 14%), companies with ISO14001 certification or with an environmental focus as a choice criterion regardless of the sector (14 papers: 13%), the educational sector (12 papers: 11%), and the health sector (6 papers: 6%). The automotive industry, banks, oil and gas industry, electrical and electronic industry, textile industry, building and public works, listed companies, mining industry, multinationals, pharmaceutical industry, food industry, carbon industry, public companies, chemical industry, sports sector, aviation sector and agricultural sector did not receive much attention from the researchers.

IV. Findings of content analysis

Based on our analysis, the existing literature on GHRM is analyzed by identifying the main themes examined in the research on GHRM. We will present the evolution of the concept of GHRM, the research themes identified in the reviewed studies: antecedents, challenges, consequences and practices of GHRM as well as the theoretical frameworks adopted.

1) Green HRM definitions

We have classified the most relevant definitions on GHRM in chronological order in Table 1.
<table>
<thead>
<tr>
<th>Authors</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandip, (2012)</td>
<td>Green human resources refer to using every employee touch point/interface to promote sustainable practices and increase employee awareness and commitments on the issues of sustainability.</td>
</tr>
<tr>
<td>Dutta, (2012)</td>
<td>GHRM is a holistic view that aligns employees with the company’s environmental strategy directly, it is responsible of creating green workforce that understands, appreciates and practices green initiatives.</td>
</tr>
<tr>
<td>Renwick &amp; al., (2013)</td>
<td>GHRM is the HRM aspects related to environmental management (EM),</td>
</tr>
<tr>
<td>Jabbour, (2013)</td>
<td>GHRM is concerned with the systematic, planned alignment of typical human resource management practices with the organization’s environmental goals.</td>
</tr>
<tr>
<td>Opatha &amp; Arulrajah, (2014)</td>
<td>Green HRM is referred to all the activities involved in development, implementation and on-going maintenance of a system that aims at making employees of an organization green. It is the side of HRM that is concerned with transforming normal employees into green employees.</td>
</tr>
<tr>
<td>Ahmad, (2015)</td>
<td>GHRM is where Human Resource Management (HRM) is engaged in managing the environment within an organization.</td>
</tr>
<tr>
<td>Haddock-Millar &amp; al., (2016)</td>
<td>GHRM is the dynamics of positioning of the environmental and HR functions and their involvement in strategic environmental management and performance.</td>
</tr>
<tr>
<td>Menon &amp; al., (2016)</td>
<td>The term Green HRM is most regularly used to refer to the concern of people management policies and practices towards the broader corporate environmental schedule.</td>
</tr>
<tr>
<td>Uddin &amp; Islam, (2016)</td>
<td>Green HRM involves environmentally-friendly human resource policies and practices that, on the one hand, will help organizations achieve its monetary goal through environmental branding, and on the other hand protect environment from any negative impacts that might be caused by the organization’s policies and actions.</td>
</tr>
<tr>
<td>Masri &amp; Jaaron, (2017)</td>
<td>GHRM refers to using Human Resources Management practices to reinforce environmental sustainable practices and increase employee’s commitment on the issues of environmental sustainability.</td>
</tr>
<tr>
<td>Ullah, (2017)</td>
<td>Green HRM is an emerging philosophy that focuses on the integration of green management concepts into HR strategies.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Description</td>
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<td>------------------------</td>
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<tr>
<td>Aykan, (2017)</td>
<td>GHRM can be defined as the triggering force of the human resource implementations that improves both economic and environmental sustainability of business resources by undertaking change and developing environmental conditions.</td>
</tr>
<tr>
<td>Zaid &amp; al., (2018)</td>
<td>GHRM is a cohesive set of human resource practices, which has consequences on the performance of firms through: green hiring, green training and involvement, green performance management and compensation.</td>
</tr>
<tr>
<td>Ren &amp; al., (2018)</td>
<td>GHRM is an organization’s aspiration to design and implement an HRM system that supports the environmental concerns by: (1) formulating an HRM philosophy that reflects green values, (2) promulgating formal HRM policies that intend to direct the green behavior of employees.</td>
</tr>
<tr>
<td>Siyambalapitiya &amp; al., (2018)</td>
<td>GHRM has been touted as a new effective management discipline that integrates environmental management to strengthen organizational performance through environmentally responsive management practices.</td>
</tr>
<tr>
<td>Yusoff &amp; al., (2018)</td>
<td>Green HRM can be demarcated as portion of the sustainable human resource management to deal with the requirements related with environmental sustainability.</td>
</tr>
<tr>
<td>Halawi &amp; Zaraket, (2018)</td>
<td>GHRM is the side of HRM that aims to achieve environmental goals of the organization and finally to make a significant contribution to environmental sustainability.</td>
</tr>
<tr>
<td>Alkerdawy, (2018)</td>
<td>GHRM is a new managerial orientation in which a ‘green’ concept is applied to the field of HRM.</td>
</tr>
<tr>
<td>Abu Mahadi, (2018)</td>
<td>Green HRM is a process aims at promoting and supporting employees’ ecofriendly behaviors and activities by developing green policies, strategies, and practices, thereby GHRM lead to convert normal organizations into green organizations.</td>
</tr>
<tr>
<td>Sudin &amp; Saad, (2018)</td>
<td>Green HRM can be viewed as a set of integrated human resource activities that contribute to the development, implementation and ongoing maintenance of a green management system ensuring that an organization’s employees are able to effectively execute the green management initiative.</td>
</tr>
<tr>
<td>Gohar &amp; al., (2019)</td>
<td>GHRM is defined as the use of HRM guidelines, strategies, and pursuits to encourage sustainable use of resources and prohibit injury arising from environmental concerns within business establishments.</td>
</tr>
<tr>
<td>Yu &amp; al., (2020)</td>
<td>The concept of GHRM has emerged to address the alignment of diverse HRM practices with firms’ environmental sustainability objectives.</td>
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<tr>
<td>Author(s)</td>
<td>Description</td>
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<tr>
<td>Ismail &amp; al., (2020)</td>
<td>GHRM is a vast concept aimed at incorporating green practices into the organization and at creating a responsible green workforce.</td>
</tr>
<tr>
<td>Suharti &amp; Sugiarto, (2020)</td>
<td>Green HRM is the application of HRM that aims to motivate employees’ behavior to help organizations achieve their environmentally-friendly goals and contribute to environmental sustainability by showing environmentally friendly behavior.</td>
</tr>
</tbody>
</table>

Tableau 1: Evolution of Green HRM concept 2) Antecedents of GHRM

- Awareness of Green HRM
- Commitment to Human resource management
- Customer pressure
- Ecological behavior
- Electronic HRM
- Environmental awareness
- Environmental concern
- Environmental knowledge
- Environmental orientation
- Environmental regulation
- Ethical leadership
- Green academic knowledge
- Green behaviors
- Green employee empowerment
- Green Human capital
- Green intellectual capital
- Green organizational culture
- Green transformational leadership
- HR Business Partner Role
- Knowledge of green HRM practices
- Manager's environmental concerns
- Normative pressure
- Perceived green resource readiness
- Regulatory stakeholder pressure
- Relationship with stakeholders
- Relative advantage
- Senior management’s environmental-related attitudes
- Stakeholder pressure
- Strategic HR competencies
- Subjective norms of stakeholders
- Sustainability advocates leaders
- Top management commitment
- Top management support
- Transformational leadership

Figure 8: Antecedents of green HRM
In the 148 articles reviewed, 16 articles focused on the antecedents of GHRM. This shows that there is a very limited literature on the factors affecting the implementation of GHRM as well as insufficient research on this important component. Based on our review, we have organized all the antecedents of GHRM in Figure 8. The antecedents identified in our analysis suggest that several factors influence GHRM’s implementation including: transformational leadership (Moin and Al, 2020; Jia and Al, 2018; Singh and Al, 2020), top management commitment (Huo and Al, 2020; Yong and Al, 2019 (b)), environmental orientation (Obeidat and Al, 2018; Yong and Al, 2019 (a)), top management support (Obeidat and Al, 2018; Yong and Al, 2019 (a)), HR business partner role (Yong and Al, 2019; Yusliza and Al, 2017).
3) Challenges of GHRM

- Absence of green thinking
- Absence of green values
- Ambiguity of the value of greening
- Anti-environmentalism
- Complexity and difficulty in adopting green technology
- Cynicism
- Developing GHRM culture throughout the organization is a cumbersome and lingering process
- Difficulty in changing staff attitudes in a short period of time
- Difficulty in changing employee's attitudes and behaviors towards the environment
- Difficulty in changing the culture of the current workforce
- Difficulty in evaluating performance of employee's behaviors
- Difficulty in measuring the effectiveness of green HR practices on employee behavior
- Dispositional barriers
- GHRM requires a high initial investment and a relatively low rate of return
- High employee turnover
- HR professionals face the problem of having to handle too many tasks
- Implementation costs
- Insufficient awareness of green practices among managers and employees
- Lack of a comprehensive plan to implement GHRM
- Lack of culture
- Lack of employee and management support
- Lack of environmental policy within the company
- Lack of financial benefits from the GHRM practices
- Lack of green courses in universities around the world
- Lack of green human resources management infrastructures
- Lack of knowledge
- Lack of managerial interest
- Lack of organizational support
- Lack of organizational leadership support
- Lack of skills to use green technologies
- Lack of technical support
- Lack of understanding green policies
- Low incentive to implement green initiatives
- Managers resistance
- No rules for practicing green human resource management
- Resistance and rejection of the employees to implement the green initiatives
- Rush to implement environmental initiatives without prior planning
- Situational barriers
- Skepticism
- Difficulty in sourcing and recruiting quality talents with green values
- Staff resistance
- Technological barriers
- Unavailability of HR system structure
- Unskilled and unmotivated workers to implement green initiatives

Figure 9: Challenges related to GHRM implementation

We have examined the challenges related to implementing GHRM in this section with the assumption that the more organization has awareness of the factors that inhibit the successful implementation of GHRM, the better it would be at dealing with these challenges.
The results reveal that the main challenges related to GHRM in organizations include: the lack of environmental awareness and knowledge within organizations, the difficulty of enforcing green culture due to employee and managerial resistance, lack of regulation and support, etc.

1) Consequences of GHRM

- Brand recognition
- Collective green attitude and behavior
- Collective green crafting
- Competitive advantage
- Corporate Environmental Citizenship Behavior
- Corporate social responsibility
- Corporate Support for Employee Volunteering
- Cost Reduction
- Decreased turnover intention
- Environmental management capabilities
- Environmental concern
- Environmental cooperation with customers
- Environmental cooperation with suppliers
- Environmental responsibility
- Environment-friendly culture
- Ethical leadership
- Evolution of corporate environmental management
- Green creativity
- Green Employer’s reputation, Green reputation, improved Organizational reputation
- Green innovation
- Green intellectual capital: Green human capital, Green structural capital, green relational capital
- Green knowledge sharing and transfer
- Green management maturity
- Green organizational culture
- Green innovation: Green process innovation, Green Product innovation
- Green supply chain management
- Job satisfaction
- Managerial environmental concern
- Meaningfulness through work
- Organizational attractiveness
- Organizational effectiveness
- Organizational Green absorptive capacity
- Organizational identification
- Organizational performance
- Organizational prestige
- Perceived Financial Sustainability
- Proactive environmental management
- Pro-Environmental climate, Pro-environmental psychological climate
- Regulatory compliance, System compliance
- Resource Efficiency
- Retention
- Service quality and customer satisfaction
- Strong public image, Positive Image
- Success in implementing corporate environmental programs
- Success of Environmental management system
- Sustainability: Economic sustainability, Social sustainability, Environmental sustainability
- Sustainable performance: Social performance, Environmental performance, Financial performance
- Workforce health
Figure 10: Consequences of GHRM

The implementation of GHRM has shown its impact on a range of individual and organizational outcomes. These outcomes can be presented as either employee-related outcomes or organizational-related outcomes. Our research demonstrates that the existing literature on GHRM has focused on outcome analysis rather than antecedent analysis. In this research, we have classified consequences in Figure 10 into "individual level consequences" and "organizational level consequences".

Individual-level consequences

Regarding the individual-level analysis, several employee-related outcomes of GHRM have been demonstrated in previous studies, including employees’ green behavior (Amrutha et Al., 2019; Kim et Al., 2019; Dumont el Al., 2016), commitment to green activities (SUHARTI and Sugiarto, 2020; Harvey et Al., 2013), environmental passion (Mohammad et Al., 2020; Gilal et Al., 2019; Pham et Al., 2019), environmental knowledge (Fawehinmi et Al., 2020; Saeed et Al., 2018), psychological safety (Moin et Al. 2020; Ahmad and Umran, 2019), and green values (Chaudhary, 2020; Andjarwati et Al., 2019; Dumont el Al., 2016).

Findings from this category demonstrate that the company could gain several individual benefits from implementing GHRM through aligning employees’ values, attitudes, and behaviors with the firm’s environmental goals.

Organizational-level consequences

Organizational-level results indicate that organizations can benefit from GHRM practices by gaining a competitive advantage, improving performance, organizational attractiveness, green innovation, and workplace climate. It can also facilitate the effective implementation of green supply chain, environmental management system and CSR.

Based on the theoretical and empirical evidence of the included papers, researchers have been mainly focused on impact of GHRM on environmental performance (Opatha and Arulrajha, 2014; Yong et Al., 2019; Yusoff et Al., 2018), organizational performance (Alnajdaoui et Al., 2017; Bhutto et Al., 2016; Pham et Al., 2019) and green innovation (Singh et Al., 2020; Ali et Al., 2019; Arulrajah et Al., 2016).

2) Used GHRM Practices

The aim of this subsection is to highlight the different GHRM practices that can be aligned in an environmentally friendly direction. Therefore, we excluded 120 articles because of their treatment of GHRM as a unidimensional concept without considering green HRM practices.

The literature review identified thirteen GHRM practices. These identified HRM practices include green training and development, green recruitment and selection, green induction, green compensation and rewards, green performance appraisal, green empowerment and involvement, green job analysis, green culture management, green discipline management, green health and safety management, green human resource planning, green HRM
procedures, and the role of green unions. The purpose of this phase is to present the GHRM practices identified in the literature based on the attention paid to each practice.

As shown in Figure 11, despite the fact that the researchers introduced an array of practices, only five practices were the most widely reported and discussed, which were: green training and development with 113 articles (95%), green recruitment and selection with 102 articles (85%), green compensation and rewards practice with 101 articles (84%), green performance appraisal with 97 articles (81%), and green empowerment with 81 articles (67%). Then, the researchers’ interest was low regarding green job analysis and description with 22 articles (18%), green culture management with 18 articles (15%), green discipline management with 17 articles (14%), green induction with 15 articles (12%), green health and safety with 10 articles (8%), green human resource planning with 8 articles (6%), and finally, green HRM procedures and the role of green unions with 2 articles in each one (1%).

![Figure 11: Green HR practices](image)

3) Theoretical background
In order to provide strong analytical and theoretical frameworks to underpin the valuable knowledge achieved by the scholars, mapping green HRM themes with the relevant analytical and theoretical frameworks is a key task of the review process (Arulrajah et Al., 2016). On the basis of our analysis, 87 articles of the 148 articles have not referred to any theoretical framework. thus, the number of papers included in this step is 61, of which, some of the papers mobilized multiple theories. Twenty-seven theories were highlighted.
Figure 12 shows that the AMO theory (Ability-Motivation-Opportunity) and the Resource-Based view (RBV) were the most commonly used theories.

The AMO theory used in GHRM research states that the AMO model could be used to increase employees' green skills through green training and development (Ability), could motivate employees to adopt green behaviors through green performance appraisal and green rewards (Motivation), and could finally involve staff in the environmental management process by giving them the opportunity to contribute and participate in green programs (Opportunity).

The Resource-Based view (RBV) underline the idea that aligning human resources with environmental issues in companies will have synergistic effects and will lead to competitive advantage and improved performance.

The person-environment fit theory states that fit occurs when the characteristics of the individual and the work environment are well synchronized (Cheema et al., 2019). Therefore, if employees’ green values are aligned with organizational values, employees will be more engaged in achieving the organizations environmental goals.

![Figure 12: Theoritical background](image)
Social identity theory states that organizations practicing HRM are likely to be positively perceived by employees. These employees develop a strong feeling of belonging. With the green identity, employees can work, act and behave in an environmentally friendly way by fostering a green climate within the organization.

Regarding social exchange theory, environmental researchers who frame their research using social exchange framework believe that when employees feel empowered by GHRM practices, they feel pressured to help their organization become an eco-friendlier firm.

Stakeholder theory relies on the argument that the company who effectively responds to its stakeholders is more likely to develop more profound and broader environmental processes such as GHRM. These studies outline how different stakeholder pressures lead to the implementation of different GHRM practices.

Institutional theory suggests that external pressures shape organizational action. Most institutional studies applied to environmental management have emphasized the effects of coercive regulatory and social pressures on the implementation of GHRM.

Human capital theory is based on the idea of building green human capital. Green human capital is a set of employees' knowledge, skills, abilities, attitudes, experiences, commitment and creativity towards environmental management.

Discussion

Based on our systematic review, a comprehensive analysis of the evolution of GHRM was undertaken based on years, research methods, national, continental and sectoral contexts. We have also performed a content analysis of the papers focusing on the main antecedents, consequences, challenges and theoretical framework of each paper. Finally, we presented a range of GHRM practices. In this section, we discuss the research findings identified in the different strands outlined above.

The results of our timeline analysis suggest that the interest in Green HRM has increased since 2013, with a massive publication increase in 2016 and continuing to the current day. This rise could be a result of the evolution of environmental concern among organizations in recent years, which consider environmental sustainability as a business requirement and responsibility. Thus, the finding reveals that researchers have begun to acknowledge the importance of human involvement in environmental protection.

Although research on GHRM has evolved and the amount of research in this area has increased, there is a wide geographic disparity. The empirical articles included in our analysis were published in only 30 countries. Furthermore, most of these research studies have been conducted in European and Asian continents. In this regard, there is a lack of papers of the topic in North America where there is only one research in Mexico (Daily et Al., 2012). Two studies in South America in Brazil (Jabbour et Al., 2010; Jabbour, 2011). One study in the
Oceanic continent in Australia (O'Donohue and Torugsa, 2016). Finally, ten papers in the African continent of which 60% of the papers were conducted in Egypt (Farid and El-Sawalhy, 2016; ALKERDAWY, 2018; Abdeen and Sayed-Ahmed, 2019; Shaban, 2019; Al-Romeedy, 2019; Gohar, 2019). This shows an absence of research in other African countries except South Africa (Mtembu, 2018; Mtembu, 2019) and Kenya (Mandago, 2018; Kuria and Mose, 2019). The lack of papers in the outlined contexts will lead to limited knowledge of the cultural factors that may influence green HRM and its consequences.

Regarding our analysis of paper's fields, our findings shows that there is a concentration of multisector comparative studies. Then, GHRM studies have focused on the tourism sector, ISO 14001 certified companies regardless of the sector (We did not assign these researches by sector in order to note the environmental aspect on which researchers based their field selection), and then universities and colleges.

The multi-sector researches compare the degree of awareness of GHRM and its implementation across different sectors. In addition, those papers aim to study sectoral contingencies to generalize results. Tourism was also chosen as field study because most researches were conducted in Asia, specifically in countries where there is a high dependence on tourism sector (Malaysia, Indonesia, India). Furthermore, there is a huge footprint of the tourism sector on the environment such as daily waste and consumption of water and electricity.

The 3rd most studied sector is the high education sector, researchers have focused on this sector to assess the level of awareness of HR staff in universities on GHRM and to assess the intention of students (future graduates) to choose companies that are known to be environmentally oriented (Anwar et Al., 2020; Chaudhary, 2019; Halawi and Zaraket, 2018; Wulansari et Al., 2018; Guerci et Al., 2015 (b)).

In addition, the present research reveals that the majority of GHRM papers are empirical research with limited theoretical papers. Regarding the methodological approach, our results indicate that the quantitative approach dominates the research on GHRM, with less attention given to the qualitative and mixed methods approaches (only 22 articles out of 108 empirical articles have adopted these two approaches).

As the field of GHRM is still developing, qualitative and mixed research are more reliable and appropriate. Based on our findings, there is a need for exploratory research that could lead to the development of a rich theory through the discovery of new perspectives and the building of in-depth knowledge about the field.

After analyzing the trends of the articles in our literature review in terms of year, sector, field and research method, we proceeded to the content analysis of our articles, this analysis of the articles allowed us to shed light on several aspects.
This research has allowed us to identify a set of antecedents of GHRM, in other words, the driving factors that influence the implementation of GHRM. Our findings show that the attention directed towards antecedents and the number of publications in this area are very limited. Additionally, the findings revealed that GHRM antecedents consist of two dimensions: internal motives such as top management commitment and support, employee environmental awareness and concern, etc. And external motives such as pressure on the company from customers and suppliers as well as regulatory and normative pressures.

Other studies focused on GHRM consequences, specifically, the ability of GHRM functions to green employees and organizational operations. These studies are divided on two types of consequences, individual consequences such as pro-environmental behaviors, green attitudes and green lifestyle. As well as organizational consequences such as organizational performance and sustainability, competitive advantage and environmental management success.

Despite the potential of GHRM to generate positive outcomes and to assist in improving the firm’s environmental policy, GHRM faced a range of challenges. Therefore, the present study has allowed to present a set of challenges related to the implementation of GHRM. The first challenge that needs to be addressed is sensitizing HR managers to the importance of GHRM. HR managers need to understand the significance and role of GHRM in transforming organizations into green firms. Such understanding would be able to increase senior management support and commitment.

Employee and manager resistance is another major challenge that was highlighted from our analysis along with the lack of green values, environmental awareness, lack of understanding and interest in GHRM.

A further aspect that we have analyzed concerns the practices of GHRM. Based on our included papers, it appears that there is a large number of practices, but the use of some of them is still limited. Green training and development practice is the most frequently studied practice, followed by green recruitment and selection, green compensation and rewards, green performance appraisal, and green empowerment and involvement. This shows that more attention needs to be paid to some practices that have not received attention from researchers such as green job analysis and description, green culture management, green discipline management, green induction, green health and safety, green human resource planning, green HRM procedures and the role of green unions. Thus, it is suggested researchers needs to study those practices, challenges related to their implementation and their individual and organizational consequences.

Additionally, green human resource management functions are complementary and interact with each other. Hence, it is necessary to study the bundle practices (Shahriari et Al., 2019 (b)) for two reasons. On the one hand, by looking at a wide range of practices, researchers would be aware of which practices are effective in general and which ones have more impact on the environmental management system. On the other hand, the use of a set of GHRM practices
will help to enrich the research regarding the synergistic effects, especially, how these practices can be complementary, substituted, or interactive with each other.

Finally, we proceeded to analyze the theoretical framework adopted by the included articles in our research. The results emphasized an important point which is the concentration of research on two theoretical frameworks, the AMO theory and the resource-based view with a less attention to other theories. This result could allow us to conclude that knowledge on GHRM, which has not been enriched in multiple theoretical frameworks, could limit the analysis of GHRM from different perspectives. For instance, the theory of planned behavior which could be a rich theoretical framework to investigate how the implementation of GHRM could influence pro-environmental behaviors and how it can stimulate attitude towards behavior, subjective norm and perceived behavioral control of employees towards environmental programs.

Conclusion
Although GHRM is in its initial phase, organizations are becoming more aware of its importance which has driven to more implementation of green practices (Shahriari et Al., 2019 (a)). Companies have realized that employees are the cornerstone of the environmental orientation’s success (Aykan, 2017). Thus, GHRM has become a critical business process for eco-friendly organizations.

For this purpose, we conducted a systematic review of 148 publications on GHRM found in reputed databases. Our main objective was to develop knowledge in the field of green human resource management. Thus, we classified the articles by authors, years of publication, research methods, national and sectoral contexts, green HR practices, antecedents, consequences, challenges, theoretical frameworks and findings.

In the present study, we have tried to take a step towards advancing research on GHRM and expanding knowledge in this area. This research theoretically contributes to the existing literature by discussing GHRM in its overall context: antecedents, consequences, challenges, theoretical frameworks and green HR practices. This type of literature review has proven useful for the scientific community (Jabbour, 2013).

Besides presenting the current state of knowledge on GHRM, the findings of this study can serve as a guideline for future researchers who would like to investigate existing gaps in current research that still require further study.

Implications
This study makes contributions to the field by providing a more comprehensive review of green HRM papers from 2000 to 2020. Thus, this systematic review contributes to the literature in the following ways:
The findings arising from this study are a relevant contribution for GHRM literature, many researchers tend to carry out empirical research related to GHRM in companies while neglecting or perhaps or not being conscious of the importance of exploring and enriching the body literature and analyzing the current state of knowledge. However, this study can be considered as an effort to help, to some extent, establishing a solid analytical basis of scholar’s findings.

Additionally, this analysis followed an objective approach in collecting data. The data collected came from reputed journals, which guarantees the quality of the papers reviewed. Furthermore, this study provides a wide-ranging discussion of Green HRM papers, including definitions, frameworks, antecedents, consequences and challenges.

The findings of this study point out challenges related to GHRM implementation. Thus, researchers and practitioners will have a deeper understanding of the challenges of GHRM and would be able to understand the barriers that may inhibit its success. Thus, having enough information about challenges would support professionals to prepare a proactive plan and think about solutions to the potential threats.

Furthermore, the findings of the study offer some insights into GHRM antecedents. The findings of this category would be able to provide an insight to professionals on the pressures placed or that will be potentially placed on the company to implement GHRM. Thus, the company would be able to consider the need for GHRM before being exposed to these pressures.

The consequences of GHRM were also presented. On the one hand, this consequence analysis could provide an important reference for researchers to investigate consequences that have not been studied in particular contexts. On the other hand, this analysis has highlighted the benefits of implementing GHRM at the individual and organizational levels. The findings are likely to make HR professionals aware of the importance of GHRM.

Overall, this literature review contributes to shed new light on all GHRM practices studied so far. On the one hand, this GHRM practices’ configuration would provide HR professionals of the most relevant green HR practices to implement. On the other hand, would provide researchers GHRM practices that should be investigated in some contexts, their consequences and challenges related to their implementation.

The findings of the study offer some insights into the categorization of the countries in which GHRM has been studied. This categorization sheds light on contexts where GHRM has not been studied so as to invite researchers in these countries to deepen their knowledge in this field and examine the cultural differences.

Finally, this study offers a pathway for future research. In other terms, it offers researchers the opportunity to position their future studies, offering them the latest avenues of research.
Limitations
Overall, this literature review contributes to shedding new light on GVRH. However, this study is not without limitations. First, the results of the study may be potentially limited by our eligibility criteria (the inclusion and exclusion criteria), i.e., the of the keywords and language does not guarantee fully comprehensive results. Despite all measures taken, it may not be able to exhaustively capture all relevant studies on the topic. Secondly, it is clear that selecting only articles published in the most relevant databases ensures the quality of the included papers. However, other important sources, such as doctoral dissertations and reports would have given a notable contribution to this research. Finally, this research only considered papers from 2000 and 2020. Thus, the use of a broader timeframe may have allowed for a more historical view of the landmark studies in 1996 and could produce a very complete and insightful analysis. Nonetheless, we believe that our review highlights the most recent and relevant studies and research questions.

Future Directions
This review highlights some of the questions that have remained unanswered to date. Hence, we will outline a detailed research agenda in GHRM scholarship to provide updated research avenues.

The analysis of the national research context indicates that the majority of GHRM papers have been conducted in the Asian and European continents. Thus, it is critical to conduct further studies in America, Oceania, and Africa in order to verify whether the current lack of papers is due to a low commitment to the green issues, or to low interest from researchers. Additionally, such research promises to allow for a better understanding of cultural differences in GHRM.

Moreover, we anticipate seeing more research seeking to illuminate the cultural differences by conducting cross-country comparative studies. It is suggested that, due to the lack of a crosscultural model and the lack of comparative research at the international level, this question should be addressed to further develop GHRM scholarship.

Our findings point to the increased attention given to empirical research. The findings show that there is still a need for more literature review papers to improve the body of knowledge on green human resource management. The findings of the present study also show that quantitative methods have been commonly chosen. However, there is a lack of publications using qualitative and mixed approaches.

The qualitative approach will provide a comprehensive and in-depth understanding of GHRM implementation and its role. In addition, mixed-method approach is able to offset the disadvantages of a single research method through the triangulation of the various methods. Although this approach can be difficult, it provides a rich research output that will greatly contribute to knowledge.
The majority of the research was multi-industry in the previous publications, followed by tourism, ISO14001 certified companies, and higher education. The findings of the present study show that several industries have not been widely studied. For instance, employees of agricultural companies who need to understand how to save water and energy for watering trees and reduce their environmental footprint; companies in the chemical industry responsible for several environmental problems; companies in the aviation sector due to the global pollution they generate in terms of CO2 and greenhouse gas emissions and finally companies in the public sector since the majority of the research has been conducted in for-profit companies.

In addition, the following study have pointed out the lacking of application of some GHRM practices in previous research, such as the role of green unions, green human resource planning and green health and safety. The importance of these GHRM practices is proved by many previous papers. Thus, future research could further investigate those practices. We also suggest future research could investigate GHRM practices as a system by considering the interaction and complementarity between practices. This could help organizations to know which set to focus on more, to improve organizational outcomes.

The findings of the present study show also that there is a lack of research on the antecedents of GHRM. Thus, there is a major need for paying more attention to the role of internal factors (e.g., staff or senior management pressure) and external factors (e.g., external stakeholder expectations, laws and regulations) in GHRM implementation. In addition, it is suggested that future studies can investigate individual factors, such as personality and individual values, as drivers of GHRM.

Regarding theoretical framework, the results show AMO theory and RBV were found to be the most used theories, while the use of other theories remains limited. Therefore, future studies could use the theory of planned behavior to examine how GHRM practices affect employees' behavioral intention and green behaviors. In addition, goal-setting theory would also make rich contributions to the field of GHRM scholarship, this theory could provide a better understanding of the degree to which individuals get involved and committed to organizational goals as well as to examine the role of organizational interventions in employee engagement. Self-determination theory would also be valuable in assessing the extent to which GHRM would create extrinsic motivation and influence employees’ pro-environmental behaviors. Finally, Value-belief-norm theory would be a constructive theory to measure the impact of GHRM on individuals' values, beliefs and personal norms.

Finally, future research could further investigate the impact of GHRM on attractiveness, competitive advantage, green innovation and organizational performance to make these initiatives more attractive to employers. Table 3 presents brief future agenda on topics with methodological approaches that have not been widely adopted.
Qualitative Method

Exploratory study on Green HRM antecedents and consequences
The drivers of HRM in agricultural companies
Senior management's perception of GHRM: trend or business opportunity?
Green and non-green employees: drivers of employee environmental engagement in light of paradox theory
Exploring the antecedents of green employee behavior: AMO theory
Study on the perceived importance of GHRM by HR managers of polluting firms.
Perceived importance of GHRM by HRM professionals
The implementation of the GHRM: a comparative study between ISO 14001 certified companies and non-certified companies
Exploratory study of GHRM challenges
Drivers of green behavior in light of the theory of planned behavior
Antecedents of GHRM in light of self-determination theory

Mixed Method

GHRM → Green values, Green psychological climate, Green motivation → Green behavior
GHRM → Green attitudes → Green behavior → Green performance
GHRM → Organizational prestige → Organizational attractiveness "MBA students"
Top management team engagement → GHRM → Green creativity
GHRM → Norms (social and personal), Green attitudes → Green behavior → Green performance
GHRM → Behavioral intention → Green behavior → Environmental performance

Bibliography


