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Bibliometric Analysis of the Drivers of Green Human Resource Management: Analysing the Drivers through the Lens of Ability, Motivation, and Opportunity Theory

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Abstract

Sustainability has become a strategic imperative for organisations worldwide. As the deadline to achieve the United Nations' Sustainable Development Goals (SDGs) approaches in 2030, organisations are prioritising efforts to align with these global objectives. In this context, many organisations are implementing green initiatives within their operations, taking proactive steps to promote environmental stewardship and contribute to a sustainable future. Specifically, in the form of Green Human Resource Management. GHRM practices in an organisation focus on individually green all HR practices. This paper conducts a comprehensive bibliometric analysis to explore what drives GHRM through the lens of Ability, Motivation and Opportunity (AMO) theory. This paper showcases the journals, authors and countries which have contributed to extend the field of GHRM drivers. AMO theory emphasises how organisations can emphasise their abilities, motivation and opportunities to influence organisational outcomes. By systematically analysing a wide range of articles, this study has identified the key drivers of GHRM, including leadership, Corporate Social Responsibility (CSR), organisational culture, pressure and support from management. The paper further discusses the implications for future research and practice, suggesting that organisations seeking to implement GHRM policies should consider the interplay between these three key drivers to foster an eco-friendly organisational culture and enhance sustainable performance, employee engagement, and encourage green organisational citizenship behaviour.

Major Findings: The study found that research on the drivers of Green Human Resource Management has grown significantly in recent years, reflecting increasing scholarly interest in sustainable HR practices. Leadership, corporate social responsibility, green organizational culture, and stakeholder pressure emerged as the most frequently reported drivers of GHRM. The review further highlights that GHRM is consistently associated with sustainable performance, green employee behaviour, green innovation, and organizational citizenship behaviour for the environment.

Keywords: AMO Theory, Bibliometric Analysis, Green Human Resource Management, Green Human Resource Management Antecedents, Green Human Resource Management Outcomes

1. Introduction

Sustainability was first introduced by Brundtland in 1987 (World Commission on Environment and Development, 1987). Sustainability has gained a lot of attention, and it has become a major focus for organisations because of issues of climate change and regulatory and social pressures towards greater

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environmental and social responsibility. Sustainability means that a business's success is measured not only in financial terms but also by environmental and social dimensions (Gardberg & Fombrun, 2006). There is heightened pressure on organisations to address environmental concerns amid growing global environmental issues. The concept of sustainable performance places a higher focus on an organisation's environmental responsibilities and social performance rather than economic performance (Bombiak & Marciniuk-Kluska, 2018).

2. Green Human Resource Management

HRM practices focus on recruiting and managing people working in an organisation. GHRM can be described as aligning general HR practices, such as recruitment, training, performance appraisal, and rewards, with environmental policies and objectives (Teixeira *et al.*, 2016). HRM is considered the most potent tool for incorporating sustainability into an organisation's scope of achieving prosperity, environmental integrity, and social equity (Jabbour *et al.*, 2013). HRM systems can include sustainability principles by hiring the right people, evaluating their performance and giving them rewards based on actions towards achieving sustainability goals; this will improve employees' mindset regarding sustainability (Abdalla & Siti-Nabiha, 2015). GHRM plays a crucial role in environmental management, focusing on ecological objectives that can be applied to HR activities. These activities include development of an ecological working environment and environmentally responsible workers (Mohrman & Worley, 2010). GHRM enhances the role of HRM in making the concept of sustainable development a reality (Kramar, 2014).

Green recruitment and selection is a systematic hiring process that emphasises the environment. Criteria for recruitment and selection go beyond basic organisational skills to their ability to have a general understanding of sustainability concepts such as recycling, conservation, and processes which help make the world a better place (Grolleau *et al.*, 2012). Green Training and Development is a concept that aims to develop employees' skills, knowledge, attitudes, and behaviours to prevent environmental degradation (Ramasamy *et al.*, 2017). Green performance management and appraisal emphasise the ability of employees to undertake activities and strategies which focus on environmental management goals and help organisations in realising their objectives of becoming sustainable (Ramasamy *et al.*, 2017). Green compensation and rewards are financial and nonfinancial reward systems implemented for employees who have a recognisable potential to contribute to environmental management (Jabbour *et al.*, 2010). Green Employee Relations can be defined as employers' behaviour that promotes employee engagement, participation, and involvement in developing potential solutions to environmental issues (Ahmad, 2015).

3. Objective of the Paper

To map and analyse the intellectual structure and research trends in Green Human Resource Management literature using bibliometric techniques, including publication trends, influential authors, journals, affiliations, citations, and emerging themes.

- To systematically identify and synthesise the key antecedents and outcomes of Green Human Resource Management reported in the literature.
- To classify the identified antecedents of GHRM into Ability, Motivation, and Opportunity dimensions and develop a comprehensive framework explaining the drivers and outcomes of GHRM.

4. Methodology

Recently, researchers have regarded bibliometric studies as fascinating quantitative methods to measure fields in the literature and evaluate scientific production and knowledge. Using statistical techniques to analyse publications, citations, and collaboration patterns among researchers or to identify influential authors, institutions, and publications in a particular field (Rogers *et al.*, 2020), these approaches can advance theory and practice but remain a relative novelty in business research. This study adopted a two-stage review design combining bibliometric analysis and systematic literature review. The bibliometric component was employed to map the intellectual structure, publication

trends, influential authors, journals, affiliations, and research themes related to Green Human Resource Management. Subsequently, a systematic review was conducted to identify and synthesise studies focusing specifically on the antecedents of GHRM. The identified antecedents were then classified using the Ability-Motivation-Opportunity theoretical framework to provide a structured understanding of the drivers influencing GHRM adoption.

The Scopus database was selected as the primary source of literature because of its extensive coverage of high-quality peer-reviewed journals, conference proceedings, and scholarly publications across multiple disciplines (Falagas *et al.*, 2008). Scopus is widely recognised for its rigorous journal selection process, making it a reliable source for bibliometric studies. A systematic search was conducted in February 2025 using the keyword "Green Human Resource Management" in the title, abstract, and keyword fields. The search was restricted to publications written in English. The retrieved records were exported in CSV format and analysed using the Biblioshiny package in RStudio.

The study followed a PRISMA-inspired screening procedure consisting of identification, screening, eligibility assessment, and inclusion stages. The initial search yielded 1,110 records from the Scopus database. After removing two duplicate records and excluding sixteen studies from unrelated subject areas, 1,092 records remained for screening. Following this, titles and abstracts were reviewed to assess relevance to the study objective, resulting in the exclusion of 286 records. The remaining articles were subjected to full-text assessment. Only studies that explicitly examined antecedents, enablers, or drivers of GHRM implementation were retained for qualitative synthesis. Following this screening process, 59 articles met the inclusion criteria and were selected for detailed review as shown in Figure 1.

The bibliometric analysis was conducted using Biblioshiny in RStudio to examine annual scientific production, influential authors, journals, affiliations,

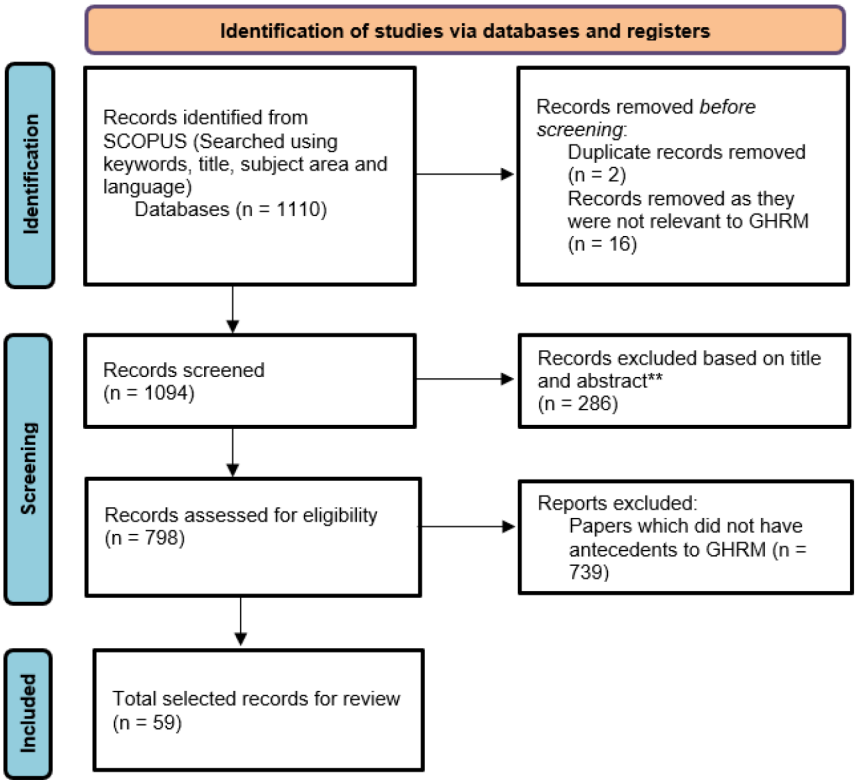


Figure 1. Search strategy for inclusion and exclusion criteria.

Source: Authors' compilation

citation patterns, historiographic development, and emerging research themes within the GHRM literature. The findings provided an overview of the intellectual development of the field. Following the bibliometric mapping, the final sample of 59 studies was systematically reviewed to identify key antecedents of GHRM. These antecedents were synthesised and categorised according to the AMO framework. Ability-related drivers included factors that enhance organisational knowledge, competencies, and capabilities; motivation-related drivers included leadership, commitment, and incentive-based factors; and opportunity-related drivers encompassed organisational and environmental conditions that facilitate GHRM implementation. This combined approach enabled both quantitative mapping of the field and qualitative synthesis of the major drivers and outcomes of GHRM.

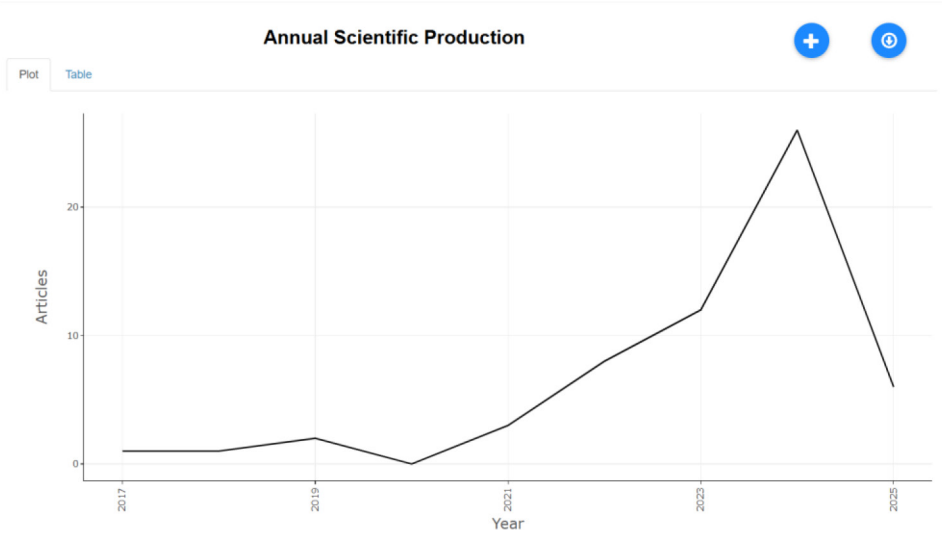


Figure 2. Annual scientific production.

Source: Authors compilation
*Note that this is not a declining trend, as the data were taken in February, 2025

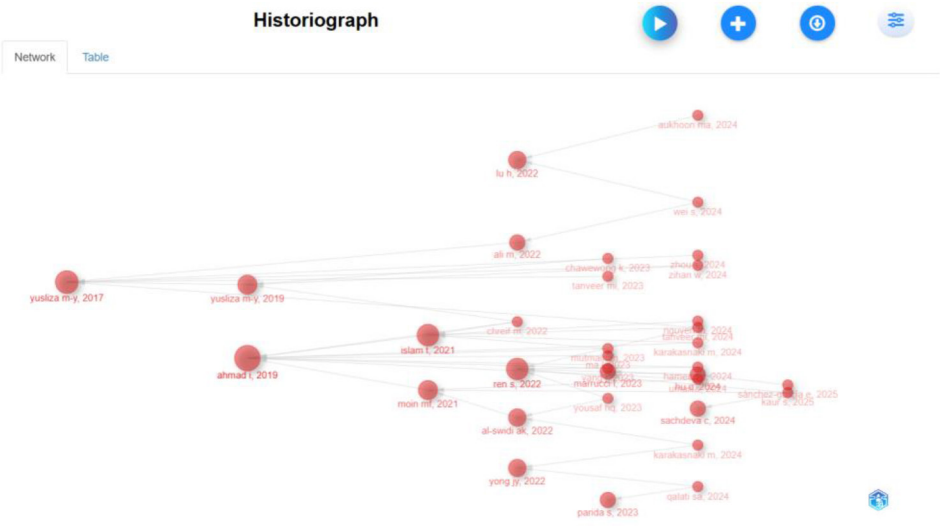


Figure 3. Historiograph.

Source: Authors compilation

5. Bibliometric Analysis

5.1 Annual Scientific Production

As we can see from the Figure 2, publications of GHRM drivers began as recently as 2017, with only 1 article. It steadily picked up in 2022 with 8 articles, and 12 in 2023, and 2024 witnessed a dramatic increase with 26 articles. With 6 articles already published by February 2025, it is apparent that the drivers of GHRM are witnessing an immense boom in academic interest.

5.2 Historiograph

Historiograph is the study of how a particular field has evolved over time. Since the study on the drivers of GHRM is still in a nascent stage, the most recent research was done in 2017 by Yusliza (2017) (Figure 3). Yusliza (2017) cites the work of Yusliza in 2019, where the focus was shifted from general practices to HR like E-HRM and the HR Business Partner role to specific factors like Top Management Commitment and Corporate Social Responsibility as the drivers of

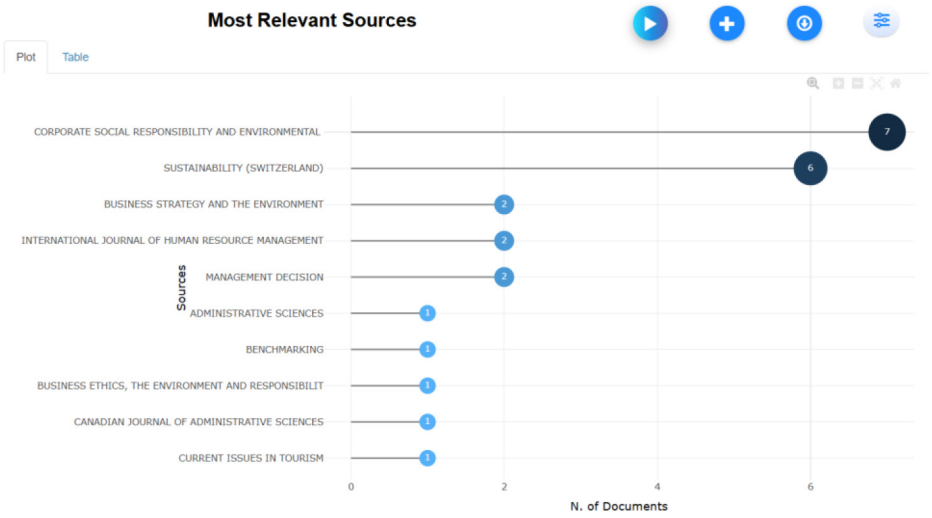


Figure 4. Most relevant sources

Source: Authors compilation



Figure 5. Most relevant authors.

Source: Authors compilation\

GHRM. The work is, in turn, cited by Chawewong and Naipinit (2023), which provides further direction on how Top Management Commitment and Green Intellectual Capitals serve as drivers of GHRM. The historiography also identifies another trajectory in which Moin *et al.* (2021), quoting Ahmad & Umrani (2019), shifted the focus from ethical to transformational leadership. The same is then quoted by Kaur (2025), which discusses green transformational leadership. These related clusters highlight the central role of leadership — whether ethical, transformational, or green transformational—in shaping and promoting GHRM initiatives across organisations.

5.3 Most Relevant Sources

In Figure 4, corporate Social Responsibility and Environmental Management has emerged as the journal with the highest number of articles published, closely followed by Sustainability (Switzerland), which has 6 articles. Business Strategy and the Environment, International Journal of HRM and Management Decision all have 2 articles published.

5.4 Most Relevant Authors

During the study period, publication count—the total number of scholarly articles produced by individual

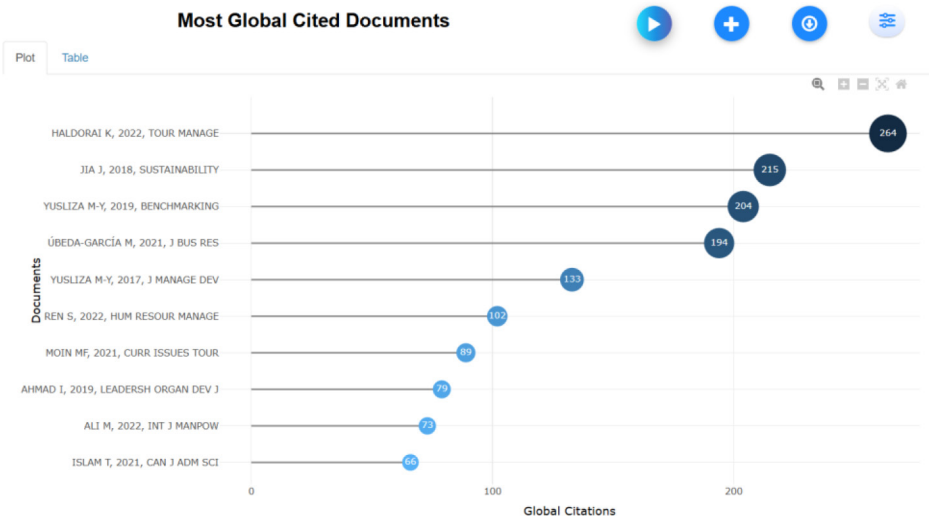


Figure 6. Most globally cited documents.

Source: Authors compilation

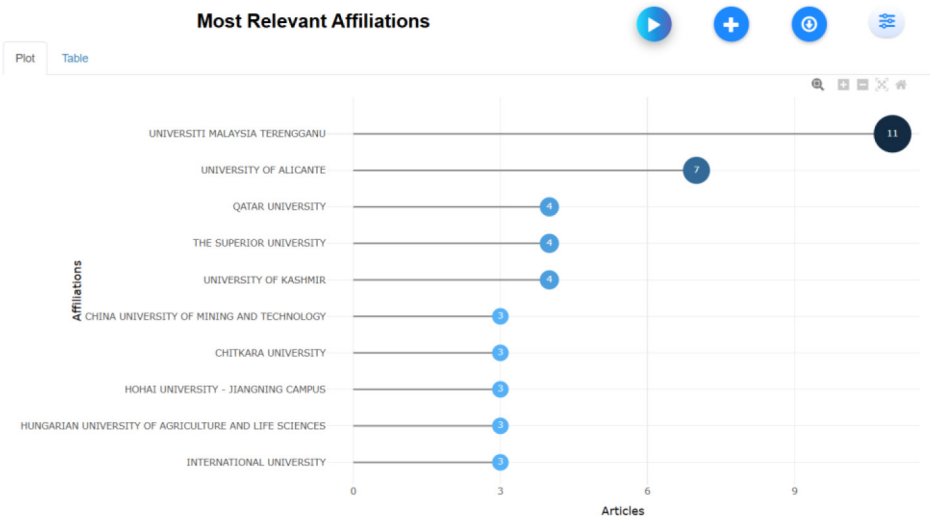
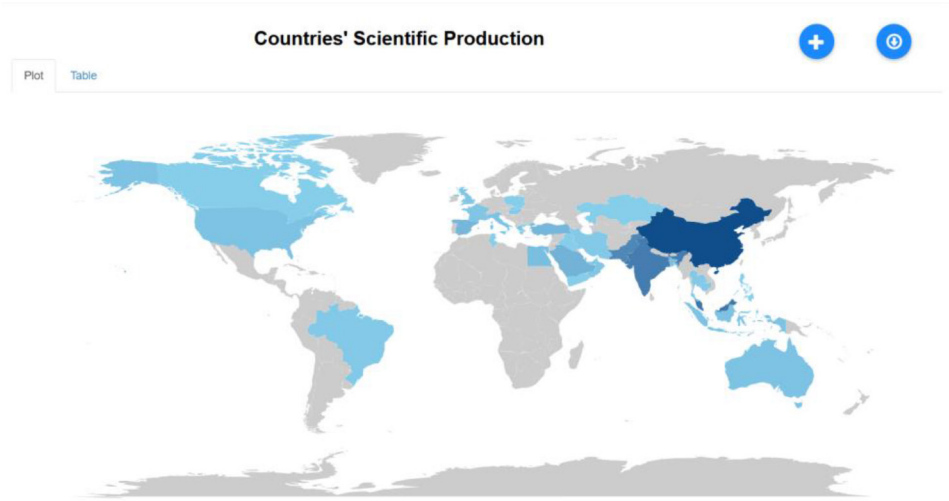


Figure 7. Most relevant affiliations.

Source: Authors Compilation

authors—revealed that only one author, Ngah AH from the University of Malaysia, published more than two articles as seen in Figure 5. Most other authors contributed either one or two publications. This highlights Ngah AH's prominent role in advancing research on GHRM compared to other contributors in the field.



Countries' Scientific Production

Plot Table

Show 10 rows Excel Search:

Country	Freq
CHINA	37
MALAYSIA	25
INDIA	23
PAKISTAN	20
SAUDI ARABIA	8
SPAIN	7
TURKEY	7
BANGLADESH	5
EGYPT	5
QATAR	5

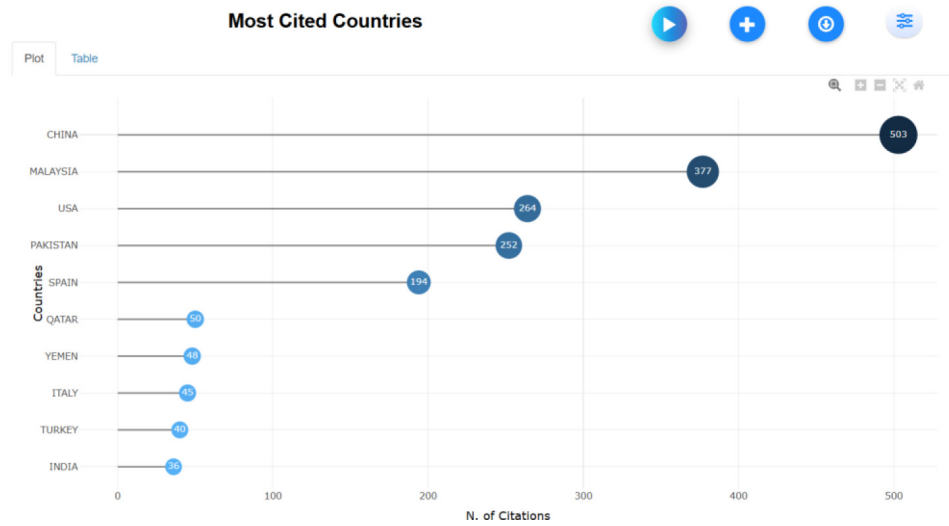


Figure 8. **(A)** Countries' scientific production visualised through biblioshiny, **(B)** Table of countries' scientific production, **(C)** Most cited countries.
Source: Authors compilation

5.5 Most Cited Documents

In Figure 6, the highest number of citations, 264, was for Haldorai, titled "Top management green commitment and green intellectual capital as enablers of hotel environmental performance: The mediating role of GHRM" in the journal Tourism Management published in 2022. Followed by 215 - Jia, titled "The continuous mediating effects of GHRM on employees' green passion via transformational leadership and green creativity" in the journal Sustainability (Switzerland) published in 2018. Followed by 204 - Yusliza, titled "Top management commitment, corporate social responsibility and GHRM: A Malaysian study", published in 2019 in the journal Benchmarking. The recurring theme for the top 3 most cited documents includes leadership and management drivers of GHRM, showcasing how it is responsible for implementing GHRM.

5.6 Most Relevant Affiliations

Affiliations indicate the institutions or organisations that support and are associated with the authors of the publications. The analysis revealed that only a few institutions have made substantial contributions to the literature on drivers of GHRM. The most relevant affiliations identified through Figure 7 are: the

- *Universiti Malaysia Terengganu*: With 11 publications, it has focused on the drivers of GHRM, establishing itself as a leader.
- *University of Alicante*: This institution has contributed 7 articles, significantly influencing current discussions on GHRM.
- *Qatar University, The Superior University and University of Kashmir*: All 3 universities have contributed 4 publications each.

5.7 Countries' Scientific Production and Most Cited Countries

Scientific contributions to GHRM as shown in Figure 8 (A) & (B) show China has the largest number of publications, with 37 authors developing literature in GHRM drivers. Malaysia and India rank 2nd and 3rd with 25 and 23 authors, respectively. Apart from the top rate in publications, China stands out as the most cited nation, with Malaysia and the United States following closely. However, Figure 8 (C) shows, while India is the world's third-largest contributor in terms of publications, it far trails in citations, with a total of just 36 citations. This reflects a discrepancy between India's research work and influence in the community of scholars.

5.8 Trend Topics

Research on the antecedents of GHRM is still in its early stages; however, one area that has garnered significant attention is the role of leadership as can be seen in Figure 9. Various forms of leadership, including ethical leadership, green transformational leadership, top management's

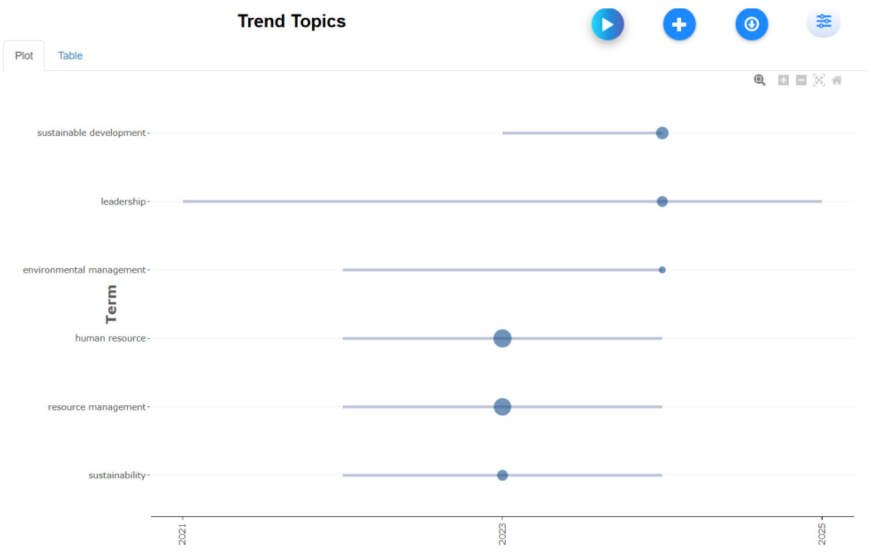


Figure 9. Trend topics.

Source: Authors Compilation

commitment to environmental sustainability, and environmental leadership, have been identified as critical factors in the successful implementation of GHRM practices. Among the 59 studies reviewed, 27 papers specifically address different aspects of leadership in relation to GHRM implementation. This trend underscores the importance of effective leadership in fostering sustainable practices within organisations.

6. Ability, Motivation and Opportunity Theory Link to the Drivers of GHRM

The AMO theory emphasises the importance of aligning organisational practices to enhance employee performance. The AMO model states that employee performance is influenced by ability, motivation, and opportunity and that organisational interests are best served by a system that attends to these three components. Organisations that effectively manage these three dimensions and can foster an environment conducive to high performance and engagement, particularly in sustainability initiatives for implementing GHRM.

7. Driving Forces of Green HRM

7.1 Ability Drivers

The ability component of the Ability-Motivation-Opportunity theory refers to the skills, knowledge, and competencies that employees possess to perform their tasks effectively. In the context of GHRM, enhancing employee abilities is crucial for promoting pro-environmental behaviours and improving environmental performance. Table 1 shows the list of ability drivers of GHRM.

Green Intellectual Capital refers to the integration of environmental concepts into intellectual capital, encompassing intangible assets like knowledge, skills, and innovation aimed at ecological protection (Ali *et al.*, 2022). Research by Sachdeva *et al.* (2024) emphasises the role of GHRM in mediating the impact of intangible resources, such as executive environmental commitment and sustainable intellectual capital, on environmental performance. Research by Shoukat *et al.* (2024) also confirms the relationship between GIC and GHRM. Chawewong & Naipinit (2023) state that GIC significantly influences GHRM, highlighting its role as a crucial intangible asset to utilise collective knowledge to craft proactive strategies for sustainable business performance. Ali *et al.* (2022) reveal that GIC significantly impacts GHRM, which in turn positively affects employee commitment, eco-friendly behaviour, and environmental performance. GIC directly influences both GHRM and hotel environmental performance (Haldorai *et al.*, 2022).

STARA refers to the integration of smart technology, Artificial Intelligence (AI), robotics, and algorithms into workplaces and industries, driving significant changes in labour dynamics and organisational practices (Oosthuizen, 2022). A study by Hossain *et al.* (2025) found that STARA has a positive impact on GHRM and environmental governance capacity, ultimately enhancing green performance. A study by Al Masud *et al.* (2024) confirms that organisational STARA capabilities positively impact GHRM and sustainable performance outcomes.

Electronic HRM involves implementing HR strategies, policies, and activities within organisations using IT-based applications to enhance organisational outcomes (Martini *et al.*, 2021). Research by Sharma *et al.* (2025) confirms a strong positive relationship between adopting E-HRM and green HRM practices, as well as environmental sustainability, positioning E-HRM as a key enabler of eco-friendly initiatives. Findings by Yusliza *et al.* (2017) indicate that electronic HRM does not have a significant positive relationship with all aspects of green HRM practices, suggesting that e-HRM alone may not be sufficient to encourage a firm to adopt all green HRM practices.

Operational Roles of HR - Capability Builder, HR Innovator and Integrator, Technology Proponent are three of six roles of HR identified by Ulrich *et al.* (2012) which HR must possess to impact business performance effectively. Tanveer *et al.* (2024) reveal that operational role does not impact GHRM.

Environmental Management Accounting involves creating, analysing, and utilising financial and non-financial data to improve an organisation's environmental and economic

performance (Phan *et al.*, 2017). A study by Liu and Zhang (2022) reveals a significant positive relationship between environmental management accounting (both monetary and physical) and GHRM, and GHRM acts as a mediator in the influence of environmental management accounting on green organisational behaviour.

7.2 Motivation Drivers

The motivation component of AMO theory refers to the drive and incentives that encourage employees to utilise their skills and knowledge effectively. In the context of GHRM, fostering employee motivation is essential for encouraging pro-environmental behaviours and enhancing environmental performance. Table 2 shows the motivation drivers of GHRM.

Green Transformational Leadership/Transformational Leadership (GTL) as a concept highlights the importance of sustainability and environmental responsibility. It involves organisational leaders deliberately reducing negative environmental impacts, conserving natural resources, and protecting the planet for future generations. GHRM practices mediate the relationship between GTL and green employee behaviour (Kaur *et al.*, 2025; Sachdeva & Singh, 2024). GTL has a significant impact on GHRM, which in turn promotes green innovation (Le *et al.*, 2024). Organisations, especially Higher Education Institutions (HEIs), should use transformational leadership to promote GHRM practices that encourage and empower employees to be environmentally conscious (Umair *et al.*, 2024). Alwali and Alwali (2024) propose a theoretical model combining the Conservation of Resources (COR) and Ability-Motivation-Opportunity (AMO) theories to explore how implementing GTL positively influences GHRM. Green culture, GTL and environmental regulation enhance GHRM and corporate social responsibility (Truong *et al.*, 2024). A study by Cahyadi *et al.* (2023) makes use of Corporate Sustainability, NRBV, and TBL to explore how GTL influences GHRM positively and can encourage environmentally friendly behaviour among employees. Transformational Leadership promotes job satisfaction through the mediating effects of GHRM (Moin *et al.*, 2021). A study by Jia *et al.* (2018) uses AMO theory to understand the relationship between transformational leadership and GHRM, which can foster employees' green creativity.

Table 1. Ability drivers of GHRM

Drivers of GHRM - Ability Perspectives	Authors
Green Intellectual Capital (Green Human Capital, Green Structural Capital, Green Relational Capital)	Sachdeva G.; Taneja S.; Gupta R. (2024). Shoukat M.H.; Selem K.M.; Cao D. (2024). Chawewong K.; Naipinit A. (2023). Ali M.; Puah C.-H.; Ali A.; Raza S.A.; Ayob N. (2022). Haldorai K.; Kim W.G.; Garcia R.L.F. (2022).
Smart Technology, Artificial Intelligence, Robotics and Algorithms (STARA)	Hossain M.I.; Islam M.T.; Kumar J.; Jamadar Y. (2025). Al Masud A.; Islam M.T.; Rahman M.K.H.; Or Rosid M.H.; Rahman M.J.; Akter T.; Szabó K. (2024).
Electronic HRM	Sharma C.; Ahmad S.; Nisha; Kumar S.; Kumari N.; Ahmad R. (2025). Yusliza M.-Y.; Othman N.Z.; Jabbour C.J.C. (2017).
Operational Roles of HR - Capability Builder, HR Innovator and Integrator, Technology Proponent	Tanveer M.I.; Yusliza M.Y.; Fawehinmi O.; Ngah A.H. (2024).
Physical Environmental Management Accounting and Marketing Environmental Management Accounting	Liu L.; Zhang C. (2022).

Compiled by Authors

Ethical Leadership implies two main roles of an ethical leader: moral person and moral manager (Shakeel *et al.*, 2019). GHRM practices mediate the relationship between EL and social sustainable performance (Hung *et al.*, 2025). EL has a profound impact on GHRM, which in turn impacts employees in role green performance. EL has a significant impact on GHRM, and it promotes environmental performance (Hameed *et al.*, 2024). GHRM also mediates the relationship between EL and employees' green behaviour (Chreif & Farmanesh, 2022). EL impacts GHRM and leads to Environmental Specific Citizenship Behaviour (Islam *et al.*, 2021). GHRM mediates the relationship between EL and job satisfaction (Ahmad & Umrani, 2019).

Green Commitment/Top Management Green Commitment: Research by Sachdeva & Singh (2024), GC and GIC have a significant effect on GHRM, which leads to the environmental performance of the firm. TMGC have a positive influence on GHRM and leads

to sustainable business performance (Chawewong & Naipinit, 2023). Yong *et al.* (2022) reveals TMC is an antecedent of GHRM. TMGC directly influences GHRM (Haldorai *et al.*, 2022). TMC is essential for effectively implementing GHRM practices for sustainability (Yusliza *et al.*, 2019).

Environmental/Green Leadership: GHRM mediates the relationship between environmental leadership and GIC (Wei *et al.*, 2024). Research by Ansari *et al.* (2024) reveals GL as an enabler of GHRM. GHRM also mediates the relationship between Leadership and Employees' Green Behaviour (Mutmainah, 2023).

Table 2. Motivation drivers of GHRM

Drivers of GHRM - Motivation perspectives	Authors
Green Transformational Leadership/Transformational Leadership	Kaur S.; Arora M.; Mittal A. (2025). Le T.T.; Chau T.L.Q.; Ngoc L.T.T.; Tieu T.T. (2024). Sachdeva C.; Singh T. (2024). Umair S.; Waqas U.; Mrugalska B.; Bystrov I. (2024). Alwali J.; Alwali W. (2024). Truong Q.X.; Nguyen P.V.; Nguyen S.T.N. (2024). Cahyadi A.; Natalisa D.; Poór J.; Perizade B.; Szabó K. (2023). Moin M.F.; Omar M.K.; Wei F.; Rasheed M.I.; Hameed Z. (2021). Jia J.; Liu H.; Chin T.; Hu D. (2018).
Ethical Leadership	Hung T.H.; Luu T.-M.-N.; Nguyen P.M.; Phung D.T. (2025). Karakasnaki M. (2024). Hameed Z.; Naeem R.M.; Islam T.; Alshibani S.M. (2024). Chreif M.; Farmanesh P. (2022). Islam T.; Hussain D.; Ahmed I.; Sadiq M. (2021). Ahmad I.; Umrani W.A. (2019).
Green Commitment/Top Management Green Commitment	Sachdeva G.; Taneja S.; Gupta R. (2024) Chawewong K.; Naipinit A. (2023). Yong J.Y.; Yusliza M.Y.; Ramayah T.; Seles B.M.R.P. (2022). Haldorai K.; Kim W.G.; Garcia R.L.F. (2022). Yusliza M.-Y.; Norazmi N.A.; Jabbour C.J.C.; Fernando Y.; Fawehinmi O.; Seles B.M.R.P. (2019).
Environmental/Green Leadership	Wei S.; Wang L.; Jiang W.; Feng T. (2024) Ansari F.A.; Haque S.N.; Khan S.; Khan W. (2024). Mutmainah (2023).
CEO Environmental Belief	Ren S.; Jiang K.; Tang G. (2022).
Top Management Support	Ansari F.A.; Haque S.N.; Khan S.; Khan W. (2024).
Top Management Team Responsible Leadership	Lu H.; Xu W.; Cai S.; Yang F.; Chen Q. (2022).
Senior Management Sustainability Commitment	Qalati S.A.; Siddiqui F.; Magni D. (2024).
Corporate Social Responsibility/Environmental Corporate Social Responsibility	Zhou S.; Tiruneh W.A.; Legese M.A. (2024). Azam T.; Jamil K. (2024). Shoukat M.H.; Selem K.M.; Cao D. (2024). Aukhoon M.A.; Iqbal J.; Parray Z.A. (2024). Nguyen T.H.; Van H.V.; Afifa M.A.; Nguyen N.M. (2024). Tanveer M.I.; Yusoff Y.M.; Ngah A.H.; Khan M.A.K. (2023). Yang J.; Malik S.Y.; Mughal Y.H.; Azam T.; Khan W.; Chuadhry M.A.; Ilyas M.; Cao Y. (2023). Úbeda-García M.; Claver-Cortés E.; Marco-Lajara B.; Zaragoza-Sáez P. (2021). Yusliza M.-Y.; Norazmi N.A.; Jabbour C.J.C.; Fernando Y.; Fawehinmi O.; Seles B.M.R.P. (2019).
Rewards and Motivation	Sharma C.; Ahmad S.; Nisha; Kumar S.; Kumari N.; Ahmad R. (2025)
Culture (Organisational Culture, Organisational Green Culture, Organisational Environmental Culture)	Abousoliman A.D.; Zoromba M.A.; El-Gazar H.E. (2025). Ansari F.A.; Haque S.N.; Khan S.; Khan W. (2024). Sobaih A.E.E.; Gharbi H.; Zaiem I.; Aliane N. (2024). Truong Q.X.; Nguyen P.V.; Nguyen S.T.N. (2024). Yousaf H.Q.; Munawar S.; Ahmed M.; Rehman S. (2023)
Green Shared Vision	Yang J.; Malik S.Y.; Mughal Y.H.; Azam T.; Khan W.; Chuadhry M.A.; Ilyas M.; Cao Y. (2023).

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CEO Environmental Belief is directly related to the implementation of GHRM (Ren *et al.*, 2022).

Top Management Support is an enabler of GHRM (Ansari *et al.*, 2024).

Top Management Team Responsible Leadership has a positive impact on GHRM and leaders to OCBE (Lu *et al.*, 2022).

Senior Management Sustainability Commitment is directly related to GHRM, and it leads to Firm Environmental Performance (Qalati *et al.*, 2024).

Corporate Social Responsibility positively impacts GHRM and leads to Environmental Performance (Zhou *et al.*, 2024; Nguyen *et al.*, 2024; Azam & Jamil, 2024; Úbeda-García *et al.*, 2021). CSR impacts Sustainable Performance through GHRM (Shoukat *et al.*, 2024; Tanveer *et al.*, 2023). Using GHRM practices can amplify the positive effects of CSR on employees' environmentally friendly behaviour (Aukhoon *et al.*, 2024). CSR enables GHRM practices (Yusliza *et al.*, 2019).

Green Rewards and Motivation help in adopting GHRM practices for environmental sustainability (Sharma *et al.*, 2025).

Culture, specifically green culture, acts as an essential influencer in the adoption of GHRM practices (Abousoliman *et al.*, 2025). Research by Ansari *et al.* (2024) revealed green organisational culture as an enabler of GHRM. GOC has a significant and positive impact on GHRM (Sobaih *et al.*, 2024). GOC enhances implementation of GHRM (Truong *et al.*, 2024). Organisational environmental culture has a positive impact on GHRM (Yousaf *et al.*, 2023).

Green Shared Vision leads to green work behaviour through mediation of GHRM (Yang *et al.*, 2023).

7.3 Opportunity Drivers

The opportunity component of AMO theory refers to the conditions and resources that enable employees to apply their skills and knowledge effectively. In the context of GHRM, providing opportunities is crucial for empowering employees to engage in pro-environmental behaviours and improve environmental performance. Table 3 shows the opportunity drivers of GHRM.

Stakeholder pressure, both in the form of stakeholder and institutional pressure, leads to the implementation of GHRM, and organisational performance mediates the relationship between stakeholder and institutional pressure and GHRM (Marrucci *et al.*, 2023). Based on stakeholder theory, pressure from customer leads to implementation of GHRM (Truc *et al.*, 2024; Al-Swidi *et al.*, 2022). Research by Yong *et al.* (2022) revealed stakeholder pressure as an antecedent of GHRM. GHRM partially mediates the relationship between stakeholder integration and competitive advantage (Karakasnaki & Gerou, 2024). The study shows that different types of regulations (command-controlled, market-incentivised, and voluntary) all positively influence companies' green innovation; however, GHRM practices only play a mediating role in the relationship between voluntary environmental regulations and green innovation.

Green Managerial Awareness acts as an instrument in utilising GHRM practices for environmentally responsible production (Sánchez-García *et al.*, 2025).

Green Government Policy is considered to be the key facilitator for GHRM (Ansari *et al.*, 2024)

Green Supply Chain Practices/Environmental Protection: managers should systematically adopt and implement GSCP and GSCEP and GHRM for a sustainable business performance (Rashid *et al.*, 2024).

Green Strategic Intent is revealed to have a positive impact on GHRM (Obeidat *et al.*, 2023).

Digital Transformation and sustainable performance are partially mediated by GHRM (Ma *et al.*, 2023).

Strategic Roles of HR - Credible Activist, Change Champion, Strategic Positioner are three of six roles of HR identified by Ulrich *et al.* (2012) that significantly influence implementation and success of GHRM (Tanveer *et al.*, 2024).

Relative advantage acts as an enabler of a few GHRM practices, including green recruitment and selection, training and performance assessment (Yong *et al.*, 2022).

A proactive environmental strategy has a positive impact on environmental performance with a partial mediation by GHRM (Aggarwal & Aggarwala, 2023). GHRM partially mediates the relationship between ES and Environmental Performance (Hu *et al.*, 2024)

Perceived Organisational Green Readiness and Perceived External Green Readiness are both leading enablers of GHRM (Zihan *et al.*, 2024).

Environmental Regulations along with GTL and GOC enable GHRM (Truong *et al.*, 2024).

8. Green Human Resource Management Outcomes

For organisations to survive in the long run, sustainability is the solution. Focus on sustainability has shifted from just minimising harm to actively creating positive impacts. With this in mind, GHRM contributes to several Sustainable Development Goals, particularly those related to economic, social, and environmental sustainability. By focusing on practices that enhance employee well-being, such as green health and safety practices, stress reduction, and CSR initiatives, GHRM contributes to SDG 3 - Good Health and Well-being. GHRM contributes to SDG 8 - Decent Work and Economic Growth by contributing to economic growth without damaging the environment. By integrating environmental considerations into HR practices, GHRM supports SDG 12 - Responsible Consumption and Production within organisations. By encouraging management and employees to adopt pro-environmental behaviours, GHRM contributes to SDG 13 - Climate Action to reduce carbon footprints. By partnering with all organisational stakeholders, GHRM can achieve SDG 17 - Partnerships for the Goals.

GHRM offers numerous benefits beyond its contributions to SDGs as seen in Table 4, the most discussed benefit being sustainable performance (environmental, social and financial). GHRM contributes to the overall sustainable performance of the firm, which helps firms run their business in such a way that there is no negative impact on the environment or society (Chawewong & Naipinit,

Table 3. Opportunity drivers of GHRM

Drivers of GHRM - Opportunity Perspectives	Authors
Stakeholder Pressure (Customer Pressure, Institutional Pressure, Governmental Regulations)	Truc D.T.T.; Giang H.N.T.; Nga N.Q. (2024). Karakasnaki M.; Gerou A. (2024). Tu Y.; Lu L.; Wang S. (2024). Marrucci L.; Daddi T.; Iraldo F. (2023). Al-Swidi A.K.; Al-Hakimi M.A.; Gelaidan H.M.; Al-Temimi S.K.A.J. (2022). Yong J.Y.; Yusliza M.Y.; Ramayah T.; Seles B.M.R.P. (2022).
Green Managerial Awareness	Sánchez-García E.; Martínez-Falcó J.; Marco-Lajara B.; Zakimova A. (2025).
Green Government Policy	Ansari F.A.; Haque S.N.; Khan S.; Khan W. (2024).
Green Supply Chain Practices/Environmental Protection	Rashid A.; Rasheed R.; Ngah A.H. (2024).
Green Strategic Intent	Obeidat S.M.; Abdalla S.; Al Bakri A.A.K. (2023)
Digital Transformation	Ma L.; Zhang X.; Dong L. (2023).
Strategic Roles of HR - Credible Activist, Change Champion, Strategic Positioner	Tanveer M.I.; Yusliza M.Y.; Fawehinmi O.; Ngah A.H. (2024).
Relative Advantage	Yong J.Y.; Yusliza M.Y.; Ramayah T.; Seles B.M.R.P. (2022).
Proactive Environmental Strategy	Hu Q.; Yuan C.; Li X. (2024). Aggarwal P.; Agarwala T. (2023).
Perceived Organisational Green Readiness and Perceived External Green Readiness	Zihan W.; Makhbul Z.K.M.; Alam S.S. (2024)
Environmental Regulations	Truong Q.X.; Nguyen P.V.; Nguyen S.T.N. (2024).

Compiled by Authors

Table 4. Outcomes of GHRM

Outcomes of GHRM	Authors
Green Employee Behaviour	Kaur S.; Arora M.; Mittal A. (2025). Aukhoon M.A.; Iqbal J.; Parray Z.A. (2024). Alwali J.; Alwali W. (2024). Mutmainah (2023). Cahyadi A.; Natalisa D.; Poór J.; Perizade B.; Szabó K. (2023). Chreif M.; Farmanesh P. (2022). Ali M.; Puah C.-H.; Ali A.; Raza S.A.; Ayob N. (2022).
Green Employee Creativity	Kaur S.; Arora M.; Mittal A. (2025). Jia J.; Liu H.; Chin T.; Hu D. (2019).
Firm Environmental Performance	Qalati S.A.; Siddiqui F.; Magni D. (2024). Úbeda-García M.; Claver-Cortés E.; Marco-Lajara B.; Zaragoza-Sáez P. (2021).
Social Sustainable Performance	Karakasnaki M. (2024)
Green Performance/ Environmental Performance	Hossain M.I.; Islam M.T.; Kumar J.; Jamadar Y. (2025). Azam T.; Jamil K. (2024) Zhou S.; Tiruneh W.A.; Legese M.A. (2024)
Employee In-Role Green Performance	Hung T.H.; Luu T.-M.-N.; Nguyen P.M.; Phung D.T. (2025)
Environmental Sustainability	Sharma C.; Ahmad S.; Nisha; Kumar S.; Kumari N.; Ahmad R. (2025)
Environmental Performance & Firm Performance	Le T.T.; Chau T.L.Q.; Ngoc L.T.T.; Tieu T.T. (2024) Sachdeva G.; Taneja S.; Gupta R. (2024) Hameed Z.; Naeem R.M.; Islam T.; Alshibani S.M. (2024). Hu Q.; Yuan C.; Li X. (2024). Nguyen T.H.; Van H.V.; Afifa M.A.; Nguyen N.M. (2024). Parida S.; Chan C.; Ananthram S.; Brown K. (2023). Yousaf H.Q.; Munawar S.; Ahmed M.; Rehman S. (2023). Ali M.; Puah C.-H.; Ali A.; Raza S.A.; Ayob N. (2022). Aggarwal P.; Agarwala T. (2023). Ren S.; Jiang K.; Tang G. (2022) Haldorai K.; Kim W.G.; Garcia R.L.F. (2022)
Green Intellectual Capital	Wei S.; Wang L.; Jiang W.; Feng T. (2024)
Sustainable Performance	Al Masud A.; Islam M.T.; Rahman M.K.H.; Or Rosid M.H.; Rahman M.J.; Akter T.; Szabó K. (2024) Shoukat M.H.; Selem K.M.; Cao D. (2024) Truong Q.X.; Nguyen P.V.; Nguyen S.T.N. (2024). Truc D.T.T.; Giang H.N.T.; Nga N.Q. (2024). Tanveer M.I.; Yusoff Y.M.; Ngah A.H.; Khan M.A.K. (2023). Ma L.; Zhang X.; Dong L. (2023). Chawewong K.; Naipinit A. (2023). Obeidat S.M.; Abdalla S.; Al Bakri A.A.K. (2023).
Environmentally Responsible Production	Sánchez-García E.; Martínez-Falcó J.; Marco-Lajara B.; Zakimova A. (2025)
Sustainability	Rashid A.; Rasheed R.; Ngah A.H. (2024).
Pro-Environmental Behaviour	Sachdeva C.; Singh T. (2024).
Employee Engagement for Green Behaviour	Umair S.; Waqas U.; Mrugalska B.; Bystrov I. (2024).
Green Innovation	Sobaih A.E.E.; Gharbi H.; Zaiem I.; Aliane N. (2024). Tu Y.; Lu L.; Wang S. (2024). Kara E.; Akbaba M.; Yakut E.; Çetinel M.H.; Pasli M.M. (2023). Al-Swidi A.K.; Al-Hakimi M.A.; Gelaidan H.M.; Al-Temimi S.K.A.J. (2022).
Innovation Differentiation Advantage/ Market Differentiation Advantage	Karakasnaki M.; Gerou A. (2024)
Voluntary Green Work Behaviour	Yang J.; Malik S.Y.; Mughal Y.H.; Azam T.; Khan W.; Chuadhry M.A.; Ilyas M.; Cao Y. (2023).
Green Organisational Behaviour	Liu L.; Zhang C. (2022).
Organizational Commitment	Ali M.; Puah C.-H.; Ali A.; Raza S.A.; Ayob N. (2022).
Organisational Citizenship Behaviour for the Environment/ Environmental Specific Citizenship Behaviour	Lu H.; Xu W.; Cai S.; Yang F.; Chen Q. (2022). Islam T.; Hussain D.; Ahmed I.; Sadiq M. (2021).
Job Satisfaction	Moin M.F.; Omar M.K.; Wei F.; Rasheed M.I.; Hameed Z. (2021). Ahmad I.; Umrani W.A. (2019).
Financial Performance	Ren S.; Jiang K.; Tang G. (2022).

Compiled by Authors

2023). GHRM practices contribute to the competitive advantage of the firm while minimising environmental harm and increasing efficiency with low cost (Rashid *et al.*, 2024; Tanveer *et al.*, 2023). Organisations which implement GHRM practices result in not only energy conservation but environmental sustainability on the whole (Sharma *et al.*, 2025).

There is an implicit expectation of stakeholders that organisations must consider their impact on both the environment and people. GHRM practices help managers innovate new and green practices, leading to innovation and differentiation advantage in the shipping market (Karakasnaki & Gerou, 2024). GHRM is essential for fostering Green Intellectual Capital; although it is an added cost, it can be offset by the advantages gained by GIC (Wei *et al.*, 2024).

GHRM practices in organisations influence green employee behaviour to choose compostable items, recyclable materials, reusable tools and various environmentally friendly approaches (Kaur *et al.*, 2025). GHRM also encourages employees' green creativity by complementing the ability, motivation and opportunity of employees to generate novel green ideas, which is necessary for organisations to gain a competitive edge (Jia *et al.*, 2018). Employees who are very concerned about the environment take part in pro-environmental behaviours.

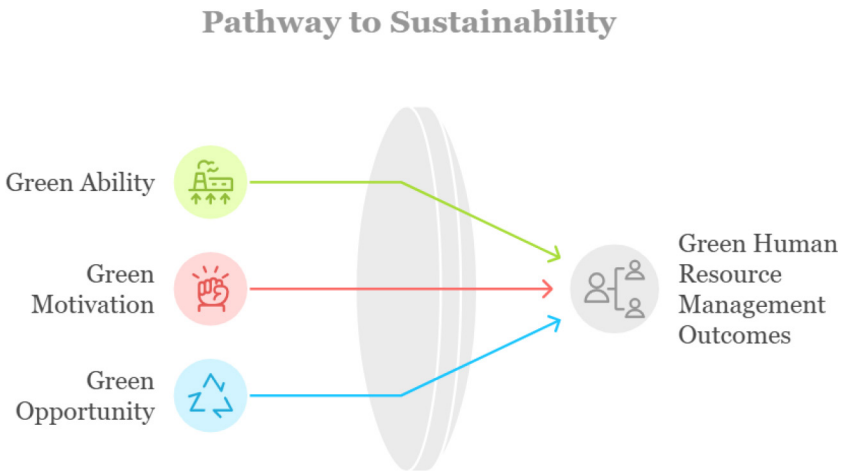


Figure 10. GHRM output.



Figure 11. GHRM AMO drivers and outcomes.

Source: Authors compilation

Whereas, employees who care less about environmental issues are nudged by GHRM practices to display PEBs (Sachdeva & Singh, 2024). Organisations through GHRM provide role model guidance for employees to take part in Organisational Citizenship Behaviour for the Environment (Lu *et al.*, 2022). Leaders, through their own pro-environmental behaviour, improve job satisfaction of the employees (Moin *et al.*, 2021).

9. Implications

For organisations to sustain in the long run, environmental concern must be of utmost importance. This study provides a guideline on how organisations can implement the drivers of GHRM to make the rhetoric a reality. Figures 10 and 11 illustrate how organizations can achieve their sustainability goals by implementing various GHRM drivers. This paper firstly focuses on adding to existing literature on the facilitators of GHRM, like leadership, top management commitment, CSR, and even regulatory pressure that drives organisations to adopt GHRM practices. The findings of this paper suggest that adoption of GHRM practices is influenced by a combination of ability (GIC, STARA), motivation (leadership, CSR) and opportunity (regulatory pressure, strategic intent) factors, which lead to GHRM outcomes. This study outlines that GHRM is not just an environmental issue, but a strategy which aligns with broader business objectives and leads to sustainable performance. Understanding all these drivers will help HR managers design policies which can enhance green initiatives in their organisation. Fostering a culture of sustainability within HRM practices can lead to sustainable performance, green employee behaviour, green innovation and job satisfaction.

Secondly, bibliometric analysis of factors influencing GHRM provides valuable insights as to how the research field is at a nascent stage, and it is beginning to grow at a very rapid pace. With China leading the contribution in the GHRM field, it suggests that Chinese scholars, institutions and organisations are at the forefront of exploring and contributing to the academic body of knowledge on the integration of sustainability practices within HRM. Sustainability (Switzerland) is a leading journal in GHRM publications, Swiss positions itself as a key platform for sharing new and innovative ideas related to GHRM.

10. Conclusion

Green Human Resource Management has emerged as a critical organisational strategy for integrating sustainability into human resource practices and achieving broader environmental objectives. Through a combined bibliometric and systematic review approach, this study identified and synthesised the key drivers and outcomes of GHRM using the Ability-Motivation-Opportunity framework. The findings reveal that leadership-related factors, including transformational leadership, ethical leadership, environmental leadership, and top management commitment, are the most frequently reported antecedents of GHRM adoption in the literature. Organisational factors such as CSR, green organisational culture, and green intellectual capital, as well as external factors including stakeholder pressure and environmental regulations, were found to play an important role in facilitating the implementation of GHRM practices. The review further indicates that GHRM contributes to a wide range of positive organisational outcomes, with sustainable performance emerging as the most frequently reported outcome. Other notable outcomes include enhanced employee green behaviour, green creativity, organisational citizenship behaviour for the environment, job satisfaction, green innovation, and organisational commitment.

By synthesising fragmented literature through the lens of AMO theory, this study provides a structured framework for understanding how organisations can strengthen their ability, motivation, and opportunity mechanisms to support the successful implementation of GHRM. The findings offer valuable insights for HR practitioners, managers, and policymakers seeking to align human resource strategies with sustainability objectives. As interest in sustainable management continues to grow, the AMO framework provides a useful foundation for guiding future research and practice aimed at advancing the adoption and effectiveness of GHRM.

11. Limitations of This Study

This study sourced data exclusively from the SCOPUS database and is limited to publications in the English

language. This may limit the scope of findings, as valuable insights from non-English sources or databases could be overlooked. To address this, future research could incorporate a broader range of databases, including those in multiple languages, to ensure a more comprehensive understanding of GHRM drivers across different regions and cultures. Although this study identifies several drivers of GHRM, it does not fully explore the challenges organisations face during implementation or propose strategies to overcome them. To address this gap, future studies could focus on identifying common barriers.

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Author Contribution

Both the authors contributed equally to this article.