



Exploring the link between green human resource management and organizational agility: the LARG HRM model in perspective

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Abstract: This article offers an in-depth analysis of the interaction between ecological human capital management and organizational agility through the LARG (Lean, Agile, Resilient, Green) model within contemporary organizations. Based on rigorous theoretical analysis, it explores how the principles of the LARG model can be integrated with green human capital management strategies to improve organizations' ability to adapt quickly and effectively to change, while minimizing their environmental footprint. The study identifies the key green HRM practices that support this integration, highlighting their strategic role in promoting responsible and agile management. This strategic alliance is of paramount importance in supporting sustainable and competitive performance on a global scale, responding to growing demands for sustainability, operational and strategic efficiency at all organizational levels.

Keywords: LARG Paradigm, Lean, Agile, Resilient, Green, HRM, organizational agility, sustainability, resilience, lean HR management, GHRM

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1. Introduction

In the modern era, organizations are under dual pressure to optimize their performance while meeting the growing imperatives of sustainability and agility in a rapidly changing world (Snow and Snell, 1993). This situation is forcing a profound rethink of human resource management (HRM) strategies,

incorporating practices that reconcile operational efficiency and ecological responsibility (Jackson et al., 2011; Renwick et al., 2013). In this complex context, the interaction between ecological human capital management and organizational agility emerges as a strategic and innovative field of study. It explores how organizations can not only adapt dynamically to external changes (Sanchez, 1995), but also adopt strategies focused on environmental sustainability. The LARG (Lean, Agile, Resilient, Green) model presents itself as an integrated response to these contemporary challenges, extolling the virtues of effective management, operational adaptability and organizational robustness, while strongly embodying a commitment to ecological sustainability (Schneider & Somers, 2006). Current perspectives in human resource management now emphasize the critical importance of adopting practices that not only exclusively optimize the economic performance of organizations, but also integrate social and environmental concerns (Schaltegger & Burritt, 2017). With this in mind, our study focuses on how the interplay between sustainable human capital management and organizational agility impacts the integration and practice of the LARG model within modern organizations. To answer this fundamental question, our study adopts a methodological approach based on in-depth theoretical analysis. The aim is to design a conceptual framework by examining theories relating to ecological human resource management and organizational agility. We also examine the potential synergies between these two fields in the LARG HRM model.

The first section of this article focuses on a comprehensive literature review concerning two key aspects of our research topic: ecological human resource management and organizational agility. It explores in detail the fundamental principles of ecological management, its strategic relevance and the criteria required for its effective implementation. On the other hand, it examines the historical evolution and strategic dimensions of organizational agility, highlighting the key role it plays in proactively adapting to very rapid change. The section also examines how these two approaches interact synergistically to strengthen organizational resilience and foster optimal performance in an environment characterized by constant change. The second part of this article presents an in-depth analysis of the LARG model, including its historical development, its theoretical underpinnings in human resource management and how it uses "Lean, Agile, Resilient and Green" principles to address the challenges of today's management of organizations and human capital. This section also highlights the possibilities offered by this model for gaining competitive advantage and improving overall organizational performance.

2 Literature review

2.1 Green HR management: Promoting sustainable responsibility for human capital

2.2.1 Conceptual analysis of green HRM

Today, the concept of "green HRM" is seen as a major innovation in the economic sector, due to its growing importance and significant development over time. This emerging concept is arousing keen interest among many researchers and professionals, given the growing awareness of the importance of sustainability and environmental protection. The term GVRH doesn't just mean environmental awareness, it's also about social well-being in favor of the organization and its human capital. For a proper understanding of the topic, it's essential to start by answering the following question: *what do we mean by green HRM?*

For (Marhatta and Adhikari, 2013) green management of human potential is the application of HRM policies to encourage the sustainable use of resources within companies. Green HR management is a fundamental element in the acquisition of green human capital, which in turn plans and implements all green initiatives carried out by companies throughout the employee management process (Mathapati, 2013). Opatha and Arulrajah (2014) define green people management as a set of policies, practices and systems aimed at encouraging the organization's employees to promote environmentally friendly actions to benefit the individual, society, the natural ecosystem and the company itself

Ecological management of human capital encompasses a set of practices and initiatives aimed at integrating environmental and social aspects into personnel management. In other words, it is the ability of HRM, through a variety of activities, to transform normal employees into green employees in order to achieve the company's environmental objectives. Its aim is to create and develop an ecological logic for the benefit of each employee, giving him or her the opportunity to make an individual and significant contribution to organizational greening, by adopting four behaviors in order to earn the badge of a green employee:

- **Preserve:** this is a bio-centric approach, focused on conserving the natural environment in its original form, which means rigorously protecting the environment against negative changes without any human intervention or nature/human segregation.
- **Conserve:** this approach is based on the rational use of nature, taking into account natural balances and environmental regeneration cycles, while promoting the vision of "nature protected with man".
- **Non-pollution:** establish the "guardian" logic, i.e., each individual adopts environmentally-friendly behaviors, minimizing any dangers that may arise, such as air and water pollution through the use of toxic products.
- **Create:** this behavior fosters the spirit of creation and innovation, by giving individuals the opportunity to bring ecological ideas to the companies to which they belong, for example (creating places with plants, ecological spaces within their offices, etc.).

2.1.2 Importance of green human resources management

We are currently witnessing an era characterized by a consensus on the need for effective global environmental management, a need that stems from the increasing adverse effects on the environment, leading to the deterioration and depletion of natural resources. Historically, interest in ecological management was officially declared at the first United Nations International Conference on the Human Environment, held in June 1972 in Stockholm, which stressed the essential importance of protecting the environment for present and future generations (Shaikh,2010). To face up to ecological challenges, every company needs to integrate environmental management into its global strategy, thus reinforcing its image as a good corporate citizen; this action is recognized in the name of corporate social responsibility (CSR), which is a set of activities aimed at improving the general well-being of a company; and so through CSR actions a company can build loyalty among its customers and employees, for example thanks to compliance with environmental requirements a company can obtain ISO 14001 certification, and it is from this certification that this entity can improve its image and attract more qualified candidates for job vacancies. Furthermore, it is essential to recognize that environmental management cannot be effectively implemented without the contribution of employees and their performance within the company, making green HRM a cornerstone of any corporate environmental program (Milliman and Clair, 1996).

2.1.3 Criteria for green human resources management

To achieve environmental objectives, it is important to identify green human resource requirements. According to Professor **Opatha** (2013), there are four types of green human resource requirements, namely:

- **Green skills:** the employee must have a set of knowledge and skills relating to greening,

without which it is difficult for an employee to be a green employee.

- **Green attitudes:** all beliefs, emotions and actions linked to environmental protection and the adoption of ecologically-friendly behaviors.
- **Green behaviors:** these are acts and positive actions aimed at achieving the company's environmental objectives. These actions are the result of each employee's own will, not a formal requirement (e.g. using both sides of the paper when writing, printing (this can help reduce electricity consumption and save trees), working with a minimum number of light bulbs switched on, etc.).
- **Green results:** are the counterpart of an ecological citizen behavior produced by an employee and which provoked ecological results (green initiatives, green solutions, reduction of waste, pollution).

2.1.4 Green HR: GREEN practices and strategic implementation

Some human potential management functions are frequently considered classic, but there are now a variety of environmentally-friendly practices linked to each of them. In this section, we take a brief look at green employee management practices. Respect for the environment and the adoption of environmentally-friendly practices have always been a major objective for any company, in order to reinforce its image vis-à-vis customers, employees and even competitors by emphasizing its role as a good corporate citizen, the literature has given great importance to the integration of environmental practices into organizational functioning, and this integration can only be achieved through the support of human capital based on a series of practices (Cherian and Jacob,2012) in order to implement a relevant ecological management system, hence green human resource management practices.

According to (Bohdanowicz,Zientara and Novotna,2011), a company's strength lies in the degree to which it applies green human resources policies, which favors the intense adoption of different environmental management systems and policies. For the majority of researchers, HRM practices are effective in ensuring competent, motivated and, above all, committed human capital that will contribute positively to the company's performance and survival in an environment characterized by fierce competition and dynamic change. These practices form a toolbox for HRM, starting with recruitment and selection, through to training, performance management and appraisal, the compensation system and employee relations management, so organizational success is an equation that links two positive factors

- employees and green strategy - to achieve a sustainable competitive advantage.

As an evolution of traditional human resources management, ecological human capital management can be incorporated into the usual functions of HRM. In this respect, several current HRM practices can be adapted to incorporate ecological principles.

- **Human resources planning and green job analysis**

This function is considered to be the fundamental basis of HRM, requiring a thorough analysis of job-related information, based on an understanding of the various dimensions of the job. It is a process based on the identification of the fundamental skills that future employees must have in order to realize and consider the full range of environmental requirements associated with the job. Today's companies are becoming increasingly aware of the importance of the environment, to the extent that they integrate at least one environmental and social task into every vacancy, with the ultimate aim of establishing an ecological vision within the organization. According to (Arulrajeh et al ,2015), all environmental practices require the creation of new jobs and the acquisition of cutting-edge skills, through the ecological planning of human resources capable of protecting and conserving both the environment and a

company's resources.

- **Green recruitment and selection**

The fundamental aim of green recruitment is to bring on board future employees committed to environmental issues, and this is achieved by integrating environmental policies into the company's recruitment strategy. Selection is made on the basis of each candidate's ecological orientation and willingness to participate in programs and initiatives aimed at preserving the environment and achieving sustainable performance (Pham and Paillé, 2020) so to attract an environmentally-friendly workforce it's important to state during interviews certain incentive phrases that show the company's commitment to respecting the environment such as: "We are an ecologically responsible company" or "once selected, we invite you to join the company's green team". For Wehrmeyer (1996), it's important to attract the most inventive and creative workers who support the company's green approach and facilitate its environmental management strategies, to which end he suggests the following:

-Job advertisements must include all environmental responsibilities.

-The physical interview should be personalized to assess the future employee's commitment to respect for the environment and to the organization's ecological objectives, for example by preparing specific questions such as "Can you describe any concrete actions you have taken in the past to support sustainable initiatives?", or exploring their values and motivation to gain an insight into their long-term commitment to environmental issues.

Recruitment practices and the final selection of future employees revolve around the following points: the integration of an ecological perspective into the final talent selection strategy, the encouragement and selection of employees showing a high degree of environmental awareness, and the final selection of candidates with the ability to take ecological initiatives.

- **Green training and skills development**

Environmental training plays a major role in improving employees' skills and competencies, which are essential to achieving the organization's ecological goals. Through a series of themes such as waste recycling, the application of occupational health and safety programs, and the conservation of company resources, the aim of the training is to raise employees' awareness of environmental protection and respect, to establish an environmental culture within the company, and to enable employees to contribute to achieving their organization's sustainable ecological goals.

- **Ecological performance assessment**

Evaluating environmental performance is one of the fundamental practices of green HR management, and this measurement requires alignment with the company's ecological performance standards (Renwick and Maguire, 2013). To achieve this, many organizations have introduced a multitude of systems and processes, the fundamental objective of which is to supervise the exploitation of resources and the reduction of the negative effects of pollution, such as: environmental auditing, the environmental management review system (EMIS). By including ecological objectives in the performance evaluation process, it becomes possible to regularly monitor progress and obtain valuable feedback (Bombiak and Marciniukluska, 2018). However, without evaluation, the organization runs the risk of lacking efficiency in its ecological management (Saeed et al., 2019).

- **Remuneration system and ecological compensation**

Remuneration and green compensation are the practices that provide the greatest incentive for ecological performance, as they are the quid pro quo for good environmental performance by employees. The salary

package can be adjusted according to ecological skills and achievements (Deshwal,2015), so it can take two forms: monetary such as bonuses and benefits or non-monetary for example: recognition, appreciation, awards, access to autonomy in a position, encouragement, time off or even blessings granted to employees and their relatives (Ritter,2003).

▪ **Managing ecological discipline**

To achieve ecological objectives and guarantee respect for environmental ethics each company should establish a set of specific rules for its employees to ensure compliance with its environmental policy (Afsar et al.,2018). In the event of non-compliance with certain rules, it is essential to set up a disciplinary system based on (sanctions, warnings, etc...) that guarantees employees' respect for and commitment to achieving organizational ecological objectives.

2.1. Organizational agility: a new concept in a changing world

2.2.1 : Historical roots of organizational agility

Navigating an unstable environment is a major challenge for companies wishing to achieve high competitiveness and superior performance. Customer expectations are changing rapidly (Vinodh et al., 2010), and the frequency of environmental change is increasing significantly. These growing dynamics introduce more complexity and uncertainty into the marketplace, amplifying competition and the search for competitive advantage to stand out from the crowd. However, certain organizational capabilities enable companies to adapt effectively to these rapid changes and take advantage of them to identify new opportunities. In this context, Hatzijordanou et al (2019) have demonstrated that possessing high organizational agility is crucial to promptly exploiting emerging market opportunities.

The notion of agility first appeared in 1982 in a study by Brown and Agnew, where it was defined as "the ability to respond rapidly to changing situations and to adapt human resources to the changing demands of circumstances". This pioneering study by Brown and Agnew (1982) laid the foundations for the concept of organizational agility, although its recognition and integration into academic literature has been relatively limited.

Many researchers widely believe that organizational agility has its origins in the 1991 Lehigh Report by the Iacocca Institute, written by Robert Nagel and Rick Dove, in which they attempted to revitalize American industry in response to the rise of Japanese and European industries in the 70's and 80's. Their contribution put forward an appropriate strategy for strengthening national competitiveness in an increasingly information- and knowledge-based economy. Criticizing the rigidity of the traditional organizational model in the face of rapid change, the report initiated the concept *of the agile enterprise*, emphasizing four fundamental principles: continuous change, responsiveness to the market, continuous quality improvement, and the integration of environmental responsibility (Marhraoui and El Manouar, 2017).

2.2.2 Organizational agility: Precise conceptualization and strategic dimensions

Organizational agility is an often-vague concept, marked by a lack of conceptual clarity. The diversity of definitions and persistent disagreements have led to a lack of common understanding. This lack of consensus complicates the application and evaluation of organizational agility, underlining the need to develop a unified and precise theoretical framework. For (Dove, 2002) organizational agility is conceptualized as the ability of an organization to adapt, thrive and evolve effectively in an environment characterized by uncertainty and constant change. Nafei (2016) also argues that organizational agility is the ability of a company to adjust its internal structures and processes in a planned way to respond to both changes in its macro-environment. The concept of agility combines both flexibility, enabling rapid preparation and efficient mobilization of resources, and adaptability, essential for adjusting operations to

changes in the environment. According to Christopher & Towill (2001), the term "agility" was originally coined in the context of manufacturing, specifically in relation to flexible manufacturing systems. In this respect, it is essential to make a clear distinction with *the Lean paradigm*, introduced in 1952 by Toyota's production system (Ohno,1988) known as *Lean Manufacturing*. This model is specifically designed for predictable environments, emphasizing Just-in-Time production, the use of Kanban and optimization of resources (Monden,1983). In contrast, organizational agility is characterized by its ability to adapt effectively to environments marked by uncertainty and rapidly changing conditions. It is crucial for an agile organization to leverage the skills, attitudes and behaviors of stakeholders in order to adapt effectively to new business ideas, models and processes, while navigating an environment where groups and individuals enjoy greater autonomy. Lu and Ramamurthy (2011) argue that the functional essence of agility lies in its ability to operate with speed and responsiveness, the main objective of which is increased competitiveness (Bernardes and Hanna ,2009). As mentioned earlier, organizational agility is a complex concept to define, due to its various definitions, conceptions and perspectives. Nevertheless, we will attempt to provide an overarching definition that incorporates all the characteristics identified from our conceptual analysis. Thus, organizational agility can be described as a philosophy and state of mind based on a company's ability to adapt quickly and effectively to changes in its environment, to take advantage of opportunities and to cope with unforeseen challenges. It is also a new strategic vision requiring the collaboration and commitment of all stakeholders, strong leadership and flexible management.

Organizational agility is a "multidimensional concept" comprising five fundamental dimensions:

- **Agile human resources:** this dimension focuses on the adaptability and skills development of employees to respond rapidly to change. It involves training programs, talent management strategies and the promotion of a culture of learning and innovation (Nagel and Dove, 1991).
- **Agile technologies:** refers to the organization's ability to rapidly adopt and integrate new technologies that improve operational efficiency and competitiveness (Christopher and Towill,2001).
- **Value chain integration:** involves seamless coordination and collaboration between internal functions, suppliers and partners to reduce lead times and respond effectively to market changes (Van Oosterhout et al,2006).
- **Concurrent engineering:** *Emphasizes* cross-functional teamwork and simultaneous product and process development to accelerate time-to-market and improve product quality (Smith and Reinertsen, 1998).
- **Knowledge management:** Involves capturing, sharing and applying knowledge within the organization to facilitate continuous learning, innovation and improvement (Alavi and Leidner, 2001).

2.2.3 The essence of organizational agility

In a business environment characterized by increased volatility and rapid change cycles, organizational agility has become a vital element for modern companies, enabling them to thrive in a competitive and ever-changing environment. This section looks at the key aspects of this essential strategic competency, highlighting how it helps companies to adapt, innovate and maintain optimum performance in the face of today's challenges.

-Responsiveness to change: Agility enables companies to react quickly to market transformations, technological innovations and changes in customer expectations, thus ensuring their competitiveness (Smith et al., 2018). By adapting quickly to these variations, agile companies can adjust their strategies and operations, enabling them to remain relevant and successful in a dynamic environment.

-Fostering continuous innovation and development: By promoting an environment conducive to experimentation, agility stimulates innovation, enabling the discovery of new opportunities and the introduction of innovative products and services (Jones et al., 2019). Agile companies cultivate a culture of innovation where new ideas are encouraged and tested rapidly. This implies shorter development cycles, continuous feedback processes and a calculated risk tolerance.

-Employee engagement and corporate culture: A culture of agility fosters autonomy, empowerment and collaboration, improving job satisfaction and talent retention (Sosik and Kahai, 2015). Agile work environments value individual contributions and encourage employees to take initiative. By empowering teams and giving them the freedom to decide how to get their work done, companies can improve employee motivation and engagement.

-Crisis resilience: organizational agility proves crucial in crisis management, enabling companies to quickly adjust their strategies and make informed decisions (Doz and Kosonen, 2010). When faced with a crisis, agile companies are prepared to react proactively, mobilizing their resources and implementing contingency plans without delay.

In short, organizational agility transcends mere adaptability; it is an indispensable strategic approach that ensures corporate prosperity in a dynamic and complex business world.

2.3 Exploring the link between green human resource management and organizational agility

The integration of green human resource management (GHRM) practices into corporate strategy has become crucial to strengthening organizational agility in the face of contemporary challenges, whether environmental or economic. The link between GHRM and organizational agility lies in their shared ability to promote sustainability and adaptability within modern companies. GVRH fosters the creation of a working environment that values not only economic performance but also environmental and social well-being. At the same time, organizational agility enables companies to adapt quickly to external and internal changes, exploit opportunities and reduce risks. In this sense, studies have shown that reducing the carbon footprint through HVRM initiatives can lead to a reduction in operational costs while increasing organizational agility to respond rapidly to market changes (Jabbour et al., 2013). What's more, adopting green practices in human capital management also fosters innovation, creativity and inspiration within teams. By encouraging employees to propose sustainable solutions and integrate environmental practices into their work processes, organizations can stimulate a culture of innovation that fosters organizational agility. For example, research shows that companies committed to GVRH are more likely to develop new environmentally-friendly products and services, thus meeting consumers' growing expectations for sustainable solutions (Zhang et al., 2020). By integrating environmental values into human resource management and corporate culture, and offering opportunities for direct involvement in sustainable projects, employees are more likely to feel motivated and aligned with the company's mission. This commitment strengthens staff retention and improves productivity, helping to increase organizational resilience and strengthen competitiveness (Renwick et al, 2013).

3. Towards Lean, Agile, Resilient and Green Human Resources Management: Analysis of the LARG paradigm

The LARG Model, an acronym combining the principles "**Lean-Agile-Resilient-Green**" represents an innovative approach that combines organizational agility with human resource sustainability, aimed at improving the performance and resilience of organizations in a dynamic, sustainable environment. This socio-technical system aims to increase the productivity of human capital while reducing the ecological impact within organizations. By adopting the LARG model, human resources departments can enhance their flexibility to respond effectively and rapidly to organizational change, while supporting responsible

environmental management practices aimed at minimizing ecological risks (Cabral et al., 2012). Implementing the **LARG** concept in human resources management strengthens the ability of organizations to anticipate and respond proactively and effectively to unforeseen changes, thus helping to enhance organizational stability and productivity.

3.1 LARG paradigm: historical development

The LARG concept, introduced by Azevedo et al (2010) in supply chain management (SCM), combines Lean, Agile, Resilient and Green approaches to optimize the efficiency and competitiveness of organizations. The harmonious integration of these strategies, according to Machado and Duarte (2010), improves efficiency and operational effectiveness. Carvalho and Cruz-Machado (2011) point out that this synergistic approach minimizes conflicts between these paradigms, promoting integrated, fluid management of organizational processes. However, despite the potential importance of applying the LARG concept in human resource management (HRM), there is currently a lack of empirical research on precisely how to integrate and coherently apply these four paradigms in this specific field.

3.1.1 Origins of *Lean-Agile-Resilient-Green* approaches

The LARG model brings together several approaches that were originally conceived in diverse fields such as industrial production, agile software development, crisis management and environmental sustainability. Each of these approaches has been successfully adapted and applied to enhance efficiency, flexibility, resilience and sustainability within organizations.

- **Origins of Lean:** The Lean concept has its roots in the Toyota Production System (TPS) in Japan, where it was developed in the 1950s to eliminate waste and optimize production processes to improve operational efficiency. It focuses on reducing waste, implementing continuous improvement (Kaizen) and encouraging employee commitment. (Womack et al., 1990).
- **Origins of Agile:** The Agile approach became widespread in software development after the publication of the Agile Manifesto in 2001 (Beck et al., 2001). It is characterized by its support for flexibility, collaboration, innovation and rapid adaptability to change.
- **Origins of resilience:** Organizational resilience became significant in the 1970s in the wake of economic and environmental crises, highlighting the importance of maintaining optimum performance despite disruption (Holling, 1973). It involves business continuity planning, the development of versatile skills and the promotion of a culture of adaptability.
- **Origins of Green:** In the 1990s, in response to growing concern about the environment, companies gradually introduced sustainability-oriented practices into their operations (Shrivastava, 1995). The Green approach strives to minimize the ecological impact of organizations while encouraging responsible behavior.

3.1.2 Genesis of the *Lean-Agile-Resilient-Green* Model in Human Resources Management

The integration of the LARG (Lean, Agile, Resilient, Green) paradigm into human resources management (HRM) stems from the growing need for organizations to meet complex challenges while remaining competitive and sustainable. This evolution has led to the progressive application of Lean principles to HRM, aimed at optimizing processes such as recruitment, training and performance management. These practices aim to maximize the use of employee skills, reduce operational inefficiencies and improve productivity, as highlighted by Dombrowski & Mielke (2019). In terms of agility since the 2010s, agile HRM has emerged to meet the demands of a dynamic and changing business environment (Lyskova & Rudakova, 2020). The integration of the principle of resilience in HRM finds its beginnings in the years 2000-2010, when this concept was adopted to strengthen companies' ability to manage crises and maintain employee commitment. This involves implementing business continuity plans, promoting employees' mental and emotional well-being, and developing change management strategies, as mentioned by Gittell et al. (2006). Since the years 2000-2010, the concept of sustainability, particularly in the field of human resources (Green HRM), has become crucial in encouraging corporate social and environmental responsibility. This involves adopting focused on sustainable development, implementing strategies to reduce waste, and promoting a corporate culture that actively values sustainability (Zhou et al ,2020).

3.2 Theoretical anchoring of the LARG model in Human Resources Management

The theoretical foundations of the LARG (Lean, Agile, Resilient, Green) model in human resources management (HRM) are based on the integration of various conceptual and theoretical frameworks from several fields:

Efficiency theory (Lean): The Lean paradigm is based on efficiency theory, which aims to maximize productivity by reducing waste and optimizing processes. In human resources management, this means improving time management practices, reducing redundant tasks and adopting standardized work processes (Womack & Jones, 1996).

Complexity and adaptability theory (Agile): The Agile paradigm is based on the theory of complexity and adaptability, which deals with the ability of systems to react quickly and effectively to changes in the environment. In human resources management, this implies flexible management practices, an organizational culture opens to innovation and adaptive work structures. Agile methodologies, such as Scrum and Kanban, encourage team collaboration and responsiveness (Highsmith, 2009).

Organizational resilience theory (Resilient): The Resilient paradigm builds on organizational resilience theory, which examines the ability of organizations to absorb shocks, recover quickly and continue to function effectively. In human resources management, this includes developing versatile skills, planning for business continuity and creating a culture of adaptability and support. Organizational resilience is essential for crisis management and for helping employees deal with stress and uncertainty (Boin & van Eeten, 2013).

Environmental Responsibility Theory (Green): The Green paradigm is based on the theory of sustainability and environmental responsibility, which focuses on reducing the ecological footprint of organizations and promoting eco-responsible practices. In human resources management, this includes adopting policies and practices to reduce waste, save energy and encourage environmentally friendly behavior among employees. (Daily & Huang, 2001).

By combining these four paradigms, the LARG HRM model offers an integrated approach to improving the performance and resilience of organizations in a dynamic, competitive environment. This theoretical synthesis provides a comprehensive approach to current HRM challenges, focusing on efficiency, flexibility, resilience and sustainability.

3.3 Integrating Lean, Agile, Resilience and Green Paradigms in Human Resources Management

The incorporation of Lean, Agile, Resilient and Green paradigms into Human Resources Management (HRM) represents a strategic response to the contemporary challenges facing organizations. These approaches, first developed to optimize various operational aspects, are now crucial to boosting efficiency, flexibility, resilience and sustainability within companies.

Lean HRM: Lean HRM focuses on eliminating waste and optimizing processes to improve organizational efficiency. It aims to reduce inefficiencies and maximize the use of human resources by adopting methods such as standardizing processes and reducing lead times. According to Dombrowski et al (2017), Lean HRM practices can lead to better utilization of employee skills and increased productivity through more effective talent and operations management.

Agile HRM: The Agile approach to human resources management is characterized by its flexibility and ability to adapt quickly to changes in the market and organizational environment. Agile methodologies such as Scrum or Kanban are applied to foster collaboration, innovation and responsiveness within teams. According to Alavi Wahab (2013), agile HRM improves the quality of organizational activities

by enabling rapid response to new requirements, thereby enhancing competitiveness and employee satisfaction.

Resilient HRM: Resilient HRM focuses on the ability of organizations to maintain optimum performance in the face of disruption and crisis. It involves business continuity planning, the development of versatile skills and the creation of a culture of adaptability. According to Gittel et al (2006), resilient HRM practices enhance the ability of organizations to recover quickly from crises, while maintaining long-term employee commitment and motivation.

Green HRM: Green Human Resources Management, or Green HRM, integrates environmentally sustainable practices into HR policies and processes to reduce the environmental footprint of organizations. It encourages the adoption of eco-responsible behaviors among employees and the implementation of strategies such as recycling, sustainable resource management and energy efficiency. According to Zhu et al (2008), Green HRM can not only improve companies' environmental performance, but also their reputation and competitiveness on the market, by meeting stakeholders' growing expectations in terms of sustainability.

3.4 Challenges and opportunities of the LARG model in HRM: For optimal performance

Integrating the Lean, Agile, Resilient and Green (LARG) paradigms into human capital management poses significant challenges, while opening up strategic opportunities to improve operational efficiency and promote long-term organizational sustainability. Indeed, the joint incorporation of LARG principles at HRM level represents a major challenge for companies due to the cultural and organizational adjustments required. Each approach involves profound transformations in the way teams operate, with specific requirements such as flexibility and adaptability for Agile, resilience in the face of disruption for Resilient, and the adoption of sustainable practices for Green HRM (Tidd & Bessant, 2018). In terms of cost, effectively integrating the LARG model into human resources management involves significant investment in employee training and skills development. These costs *include initial and ongoing training, technological infrastructure and costs associated with managing organizational change* (Sutcliffe & Vogus, 2003).

In terms of opportunities, LARG-centered management transforms the working environment into one conducive to innovation, creativity and continuous improvement. By integrating Lean practices, companies are able to reduce waste and optimize their processes, resulting in greater operational efficiency and enhanced productivity. The Agile approach favors rapid adaptation to change and encourages collaboration, which is essential to meeting today's challenges. The resilient dimension of the model helps organizations to overcome crises effectively, while maintaining a high level of employee engagement. Green practices, meanwhile, instill a culture of sustainability and environmental responsibility, enhancing a company's reputation and attractiveness in the marketplace. Ultimately, the LARG model of human resources management confers a competitive advantage by combining innovation, sustainability, adaptability and operational excellence. Crucially, the adoption of the LARG model in human resources management represents a major step towards more flexible, resilient and sustainable organizational practices. This enables companies to position themselves strategically to respond effectively to contemporary challenges, while capitalizing on the opportunities offered by management focused on innovation, continuous development and improved operational and strategic performance.

Conclusion

Exploring the LARG paradigm in ecological human resource management offers an innovative and integrative perspective for organizations seeking to navigate a complex economic and social environment. Combining the principles of Lean, Agile, Resilient and Green, this model not only improves operational performance and business competitiveness, but also promotes environmental and social sustainability while enhancing organizational agility. By adopting a holistic approach that harmonizes efficiency, flexibility, resilience and environmental responsibility, organizations can strengthen their ability to adapt to rapid change while minimizing their ecological impact. Ecological human resource management through the LARG paradigm, however, requires strategic management and systematic integration into organizational practices. This involves ongoing investment in employee training, the development of new skills and the creation of a culture of innovation and adaptability. In addition, regular assessment of the environmental and social impacts of LARG practices is essential to ensure continuous improvement and maintain alignment with long-term sustainability objectives. Finally, to maximize the benefits of the LARG paradigm, it is crucial that decision-makers, managers and HR practitioners work closely together to integrate these principles into overall corporate strategy. By adopting a proactive and strategic approach, organizations can not only improve their financial performance but also play a leading role in promoting sustainable and responsible practices within their ecosystem, while enhancing their agility to respond to emerging challenges flexibly and effectively. This exploration of ecological human resource management through the LARG paradigm opens up new avenues for research and development, stimulating innovation and creativity in the field of modern organizational management.

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