



DEVELOPING GREEN HUMAN RESOURCES IN THE CONTEXT OF DIGITAL TRANSFORMATION

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ABSTRACT:

The digital transformation trend continuously poses significant challenges for enterprises and organizations in adapting to new technological platforms. In addition, social responsibility commitments also require organizations and businesses to ensure sustainable development. Thus, the development of green human resources has become a decisive factor for the success of an organization. Green human resources are not only workers with professional knowledge and skills about the environment but also pioneering employees with a high awareness of the impact of business activities on the environment and society. However, the development of green human resources in businesses will face many challenges from finding skilled, knowledgeable human resources to training and maintaining a green culture in the organization. To overcome these challenges, enterprises need long-term investment and commitment in time, effort, and finance. This article analyzes the role and development trends of green human resources in the context of digital transformation. It offers recommendations to support businesses in overcoming challenges in building green human resources.

KEYWORDS:

Digital transformation, Green human resources, Sustainable development, Human resource management.



1. Introduction:

In the era of the 4.0 revolution, an increasing number of businesses have initiated economic development strategies and promoted digital transformation (Al S.J. (2023)). In this process, businesses need to effectively manage resources to create sustainable development. This poses a challenge for businesses in preventing negative impacts on the environment through the transition from traditional human resources to green human resources (Institute for Market Transformation 2018). It can be seen that digital transformation brings many new opportunities for businesses and organizations but also poses unique challenges, especially the issue of environmental protection and sustainable development. Therefore, the development of green human resources is no longer a trend but has become more urgent and important than ever before.

2. Theoretical Basis

2.1. Concept of Green Human Resource Management

The concept of green human resource management is not merely about training and developing skills for employees but also about opening up a new value system in the work environment. This is a human resource management method focused on creating a labor force that is conscious of environmental protection and sustainable development (Khanh 2023). Green human resources not only emphasize technical and professional aspects, but also stress creative thinking, adaptability to market changes, and loyalty to green values.

Furthermore, green human resource management also involves the application of advanced solutions and technologies to minimize the impact of production and business activities on the environment (Tran et al., 2022). Technological solutions may include the use of renewable energy sources, optimizing production processes to reduce waste, and promoting recycling and the use of recycled materials.

Thus, green human resource management not only requires individuals with professional skills but also demands leaders and operators who have a deep understanding of the importance of environmental protection and sustainable development in business and society.

2.2. The Importance of Green Human Resources in Digital Transformation

According to the Bureau of Informatics - Ministry of Information and Communications (2023), digital transformation is not only the application of new technology into production and management processes but also a comprehensive restructuring process of the organization from operating methods, and work processes to approaches and interactions with customers. Digital transformation brings many new development opportunities, but also poses many challenges for organizations and businesses in terms of environment and society.

Enterprises need to ensure that the digital transformation process is sustainable and does not harm the environment. The growth in technology usage can lead to an increase in energy consumption. This poses a risk to environmental pollution issues and has negative impacts on natural resources (Jiawei et al., 2023). Therefore, a significant challenge for organizations and businesses is that they need to find new approaches and develop technological solutions that are not only effective but also environmentally sustainable (Ren et al., 2018).

In this context, green human resources have become an indispensable factor. Employees with knowledge and skills in this field not only have the ability to propose solutions and apply green

technology but also ensure that new processes and products developed have a positive impact on the environment. They can train their work community about sustainable methods, and promote the organization's awareness and commitment to green development goals (Rizwana et al., 2023). At the same time, these individuals also play an important role in building and maintaining a positive organizational culture toward the environment. Therefore, green human resources are an indispensable part that creates the driving force to promote sustainable development in the digital transformation process.

3. Current Status and Challenges

3.1. Current State of Green Human Resources

Despite awareness of green human resource management and organizations, businesses also have a certain understanding of the importance of environmental protection and promoting sustainable development. The work of developing green human resources continues to face many challenges and limitations. There are still a majority of organizations that have not prioritized the development of green human resources.

Enterprises and organizations may not yet realize that investing in the training and development of green human resources is not only a long-term strategy that brings environmental benefits, but also a strategic business opportunity to improve performance and enhance competitiveness. In fact, according to Ozlem and Serife (2022), the development of green human resources can bring many benefits, including enhancing the company's image, attracting and retaining talented employees, as well as reducing operational costs, and complying with environmental regulations.

Furthermore, some organizations may struggle to evaluate and measure the effectiveness of green human resource training and development programs (Ahmed A.Z., Ayham A.M.J & Abdul T.B. (2018)). The lack of accurate information and data on the economic and environmental benefits of investing in green human resources can reduce the determination and commitment of managers and business leaders.

Given the current situation, there needs to be a strong commitment from leaders and support from senior managers to facilitate the development of green human resources. At the same time, businesses and organizations also need to enhance the exploitation of information and data on the economic and environmental benefits of investing in green human resources, thereby promoting the awareness and commitment of organizations to sustainable development.

3.2. Challenges in Transitioning to Green Human Resources

The challenge in transitioning to green human resources is not only about technical training and skills but also about changing the consciousness and mindset of employees, ultimately forming the culture of the organization.

One of the main challenges is the lack of knowledge and understanding about environmental issues and sustainable development. The majority of current employees may not yet realize the importance of environmental protection and the impact of business activities on the environment (Nam Nam 2023). This knowledge deficit can lead to a lack of awareness and consciousness in applying green methods and processes within the organization.

Furthermore, businesses may also face challenges regarding the lack of necessary skills to implement green technology solutions. For certain fields such as information technology, engineering,

and management, the development and use of green technology may require specialized skills and knowledge that not all employees possess.

Finally, there is the need to change the mindset and organizational culture to align with a greener working environment. This shift in mindset and culture requires awareness and active participation from employees, along with commitment from leaders and managers to drive and sustain this change (Pietro & Anamaria 2019).

To overcome these challenges, organizations need to establish training programs and develop green human resources, create conditions and encourage learning and skill development, while promoting organizational culture change through strong leadership and commitment from the highest level of leadership.” This translation maintains an academic tone as requested.

4. Advantages and Limitations

4.1. Advantages of Green Human Resources

The advantages of green human resources not only lie in reducing negative impacts on the environment but also in bringing many other benefits that organizations cannot ignore.” This translation maintains an academic tone as requested.

Enhancing creativity and work performance: Employees trained in environmental matters often have a high awareness of using resources and energy efficiently. They tend to propose and promote creative working methods to reduce waste and optimize work processes. According to Xuemei and colleagues (2022), environmental awareness also stimulates creativity in searching for and applying new green solutions, from using renewable energy sources to recycling and resource conservation.” This translation maintains an academic tone as requested.

Improving company image: Organizations strongly committed to the environment and sustainable development often attracts attention from the community and other interest groups. These organizations also tend to attract and retain more talented employees (McBride Sustainability 2023). As a result, businesses can create a positive image thanks to their talented staff and focus on the environment. This positive image can continue to enhance the brand value of the business and continue to help the business attract attention from the community, customers, partners, and other potential candidates.” This translation maintains an academic tone as requested.

Enhancing solidarity: Green human resources not only have a positive impact on the environment but also affect the performance of the organization thanks to the enhancement of cooperation within the organization (Paul & Bhattacharya 2016). This leads to an increase in the value and competitiveness of the organization in the market.” This translation maintains an academic tone as requested.

A collective commitment within an organization towards environmental protection and sustainable development can foster a strong team spirit. Employees take pride in working for an environmentally responsible organization and feel a strong connection to the company’s goals and values.

Green projects and activities often provide opportunities for members of an organization to spend time doing things together, beyond their daily business operations. This time helps employees develop understanding and bonding, thereby fostering better unity and cooperation among different departments within the organization.

4.2. Limitations in Developing Green Human Resources

Although green human resources offer many benefits, they are not without some notable drawbacks and limitations.

Ineffective measurement and evaluation methods: One of the biggest challenges in implementing green human resources is the ability to measure and evaluate the effectiveness of related programs and activities (Sáng 2024). Identifying the actual contribution of green human resources to the organization's sustainable development goals can be difficult. Businesses need to identify specific indicators and criteria to measure the effectiveness of green human resources, from energy savings to improvements in work processes. However, developing accurate measurement methods requires significant investment in resources and time to develop an appropriate evaluation system.

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High initial investment costs: The deployment of green human resources often requires a large initial investment from the organization (Van Khanh 2023). These costs may include expenses to develop high-quality training programs and purchase new equipment and technology, as well as costs for the experimentation and adjustment process. Especially in the context of fierce business competition, organizations may face difficulties in implementing green measures without increasing their production and competition costs.

5. Solutions and Recommendations

5.1. Enhancing Training and Development

To enhance the utilization rate of green human resources, organizations need to implement specific and smart-targeted measures, including the construction of training and development programs with high applicability that fully meet the needs and requirements of the new working environment.

Firstly, organizations and businesses need to design and implement training programs effectively. This is an important part of enhancing the training and development of green human resources. Training programs can be designed to provide basic knowledge about environmental protection, green technology, and sustainable working methods to fully meet the needs and requirements of the new working environment (Hung V.T & Phong V.H (2021)). In addition, training also needs to focus on developing soft skills such as creative thinking, teamwork, and problem-solving, to help employees become flexible and responsive to new challenges. Simultaneously, combining modern training tools such as online learning, online courses, and practical training sessions will create a diverse and interesting learning experience for employees. Flexibility in approaching and participating in training programs will help employees easily accumulate new knowledge and skills effectively while creating opportunities for personal development and career transition.

Secondly, in addition to ensuring that employees acquire knowledge and skills through training programs, organizations, and businesses also need to create conditions for them to apply this understanding to their practical work. This requires the creation of opportunities and an appropriate work environment to test and apply new knowledge effectively (Seismic). An important measure is the establishment of projects and tasks with high applicability. These projects not only provide opportunities for employees to apply the new knowledge they have learned but also help them practice skills and develop the ability to work independently and in teams. Providing internship and practice opportunities is also an effective way for employees to approach and apply new knowledge and skills. Interning in a real-world environment helps them better understand the challenges and opportunities in their field, while also providing opportunities for them to apply the skills they have learned to real-life situations. Moreover, creating a work environment that encourages creativity and innovation is also an important factor. By encouraging creativity and innovation in all aspects of work, employees will have the opportunity to implement new ideas and test advanced work methods, thereby creating new value for the organization and society (according to 10xDS Team 2023).

Finally, the measurement and evaluation of the effectiveness of training and development programs play an important role in ensuring that investments in green human resources bring real benefits and value to the organization. To accomplish this, organizations need to establish indicators, and measurement criteria, and apply appropriate evaluation models (according to Thai Minh 2023). These criteria not only focus on measuring the number of participants or training hours but also need to evaluate more deeply the application of knowledge and skills in practical work, the impact of the training program on work performance, and the personal development of employees. At the same time, the evaluation process also needs to ensure transparency and fairness. Feedback from employees and managers is extremely important to evaluate the actual effectiveness of the training and development program (ResoPro Training Services 2023). Organizations need to create conditions to receive honest feedback and build adjustment and improvement measures based on this information. By conducting systematic and continuous measurement and evaluation, the organization can not only ensure that the green human resources training and development programs are achieving the set goals but also capture opportunities to improve and optimize their effectiveness in the future. This means that the organization can continue to promote sustainable development and integrate into the Industrial Revolution 4.0.

5.2. Creating Supportive Policies and Regulations

To facilitate the development of green human resources, the government needs to play an important role in promoting and supporting the establishment of appropriate policies and regulations. Specific measures may include:

Promotions and Financial Support: The government can establish promotional packages and financial support to encourage organizations to invest in the development of green human resources (OECD 2012). This may include grants, preferential interest rate loans, or providing other financial support to alleviate the initial financial pressure on organizations and businesses.

Investment and preferential loans: The government can provide investment funds or loans with preferential conditions to organizations planning to invest in the development of green human resources. This helps to reduce the initial financial pressure on organizations and creates more favorable conditions for the implementation of projects and training programs.

Cost Sponsorship: In addition to providing investments and loans, the government can also offer other types of financial support such as tax incentives, or subsidizing a portion of operational

costs. These subsidies also help to reduce the costs incurred in the implementation and operation of green human resource development programs.

Preferential Tax Policies: The government can enhance preferential tax policies and incentives in the Corporate Income Tax Law to encourage organizations to carry out activities and invest in green human resources, support and encourage green production (GreenYellow 2022). The exemption or reduction of taxes for activities and products that have a positive impact on the environment and sustainable development can be a significant incentive for businesses.

Tax Exemptions for Green Business Models: Implement policies of exemption or reduction of taxes for activities and products that have a positive impact on the environment and sustainable development (OECD 2012). Taxes such as income tax, value-added tax (VAT), and import tax can be adjusted or exempted for businesses operating in the field of training and development of green human resources, green production, or other fields that use green human resources.

Tax Exemptions for Green Technology and Equipment: Implement special tax reduction policies for the purchase and use of green technologies and equipment. This not only helps to reduce initial investment costs for businesses but also encourages the widespread application of green technologies and solutions in the production and business process.

Tax relief for research and development: The government can provide incentives and tax support for research and development activities related to green human resources. This support not only encourages investment in R&D but also promotes innovation and creativity in this field.

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Establishing green standards: The standards for training and developing green human resources may include requirements for training program content, minimum skill, and knowledge levels, as well as requirements for evaluating and ensuring the quality of the programs.

Technical support: The government can provide financial and technical support to organizations and training institutions to promote the development of green human resources. These support measures may include providing physical facilities and equipment, as well as support for technology and knowledge transfer.

Monitoring and evaluation: Both the internal bodies of businesses and organizations, as well as the government, need to implement measures to monitor and evaluate the enforcement of policies and regulations related to green human resources. This ensures that support measures are implemented effectively and yield the expected results.

5.3. Enhancing information, creating awareness

Communication Strategy: To promote the development of green human resources within organizations, the creation of means for information exchange and experience sharing is necessary and effective. This is not only a way to share knowledge but also an opportunity to build a knowledge foundation and foster a deep understanding of this issue.

Seminars and regular meetings are organized as one of the important ways to create exchanges, and discussions, and share opinions among employees about green human resources. These events not only provide the latest information but also offer opportunities for employees to learn and train (United Nations 2023), thereby building a community of learning and mutual development.

Furthermore, *the creation of forums and online communities* also plays an important role in promoting the exchange of information and experiences about green human resources. In this way, the company not only creates an open and flexible space for communication but also encourages cooperation and learning among members.

Finally, *the use of internal communication tools such as intranet and email* is also an important means to share the latest information and plans about green human resources. This ensures that all employees are updated and involved in the organization's latest activities and policies related to green human resources.

Education and Propagation: The work of education, propagation, and sharing of green knowledge and green innovation (including product and process innovation) contributes significantly to creating a competitive advantage (Khurram et al., 2023). Organizations and businesses can create educational content, organize training sessions, propagate, and simultaneously build a conducive environment for employees to pilot and practice knowledge and experience.

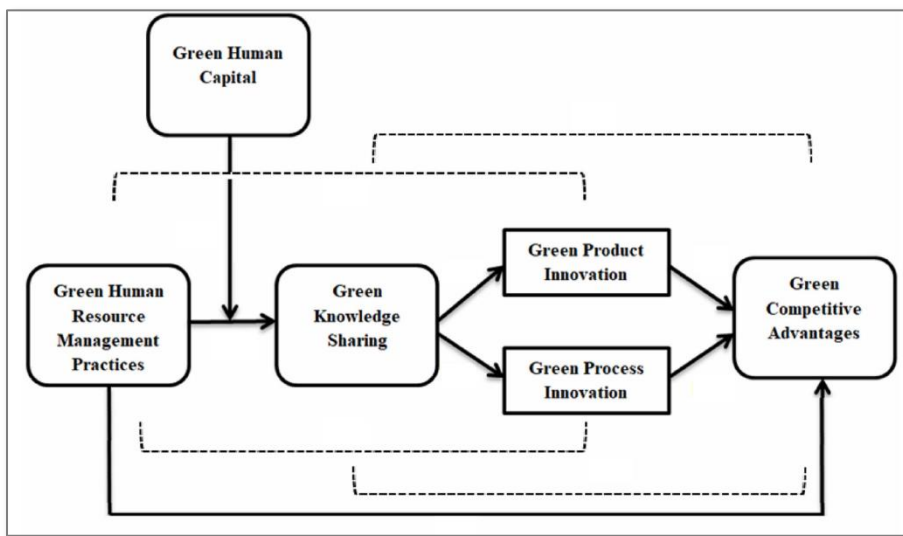


Figure 1: Theoretical model of education and advocacy for green human resources to create a green advantage

Source: Khurram et al., 2023

Creating educational and promotional content: Companies can produce instructional materials and guides on green human resources, including real-life cases, guidelines, and lessons from leading organizations in this field.” This translation maintains an academic tone suitable for scholarly discussions and writings.

Periodic Training: The company can organize regular training sessions and workshops with the participation of experts in the field of green human resources. The involvement of these experts not only provides basic knowledge but also promotes discussion and exchange of ideas among employees on this issue.” This translation maintains an academic tone suitable for scholarly discussions and writings.

Building pilot models: This demonstrative measure helps to clearly and specifically illustrate the benefits and value of green human resources. By creating models and typical examples of applying green human resources in the organization, companies can create a spread and positive

impact throughout the organization.” This translation maintains an academic tone suitable for scholarly discussions and writings.

Building Organizational Culture: Businesses need to build and promote a positive organizational culture towards green human resources. This can be achieved by creating a work environment that encourages creativity, innovation, and a spirit of cooperation in the development and application of green solutions (Qaisar 2024). Awards, commendations, and incentives will motivate employees to participate and contribute to the development of green human resources.” This translation maintains an academic tone suitable for scholarly discussions and writings.

Creative Work Environment: The company can create an open, flexible work environment that encourages creativity and innovation. This could include the development of flexible work frameworks, encouraging the contribution of new ideas and opinions from all levels within the organization, and facilitating safe experimentation and failure.” This translation maintains an academic tone suitable for scholarly discussions and writings.

Promoting cooperation and knowledge sharing: Companies need to create opportunities and communication channels to promote cooperation and knowledge sharing among departments and work groups (Hung & Phong 2021). This helps to enhance the ability to learn and apply green solutions within the organization.

Networking and collaboration: Businesses need to connect and collaborate with other organizations, communities, and relevant parties to share information, experiences, and resources related to the development of green human resources. Building this network will help expand and enhance awareness and understanding of green human resources in the community and society.

Connecting with experts: Businesses can collaborate with experts and non-governmental organizations (NGOs) specializing in green human resources to organize communication and education activities (John & Loren 2009). This not only enhances the company’s credibility and influence but also provides a source of knowledge and experience from leading experts.

Collaborating with the community: Businesses can collaborate with the local community to develop programs and projects related to green human resources. This not only helps create value for the community but also facilitates participation and support from the local community (Johnny et al., 2023).

Establishing strategic partnerships: From the connections and collaborations, businesses can consider establishing strategic partnership relationships with organizations, businesses, and non-governmental organizations (NGOs) that have credibility and experience in the field of green human resources. This helps to share more information, experiences, and resources to aim towards a common goal, while also creating opportunities for collaboration in projects and programs for the development of green human resources.

6. Conclusion

In conclusion, the development of green human resources is an indispensable part of the context of digital transformation and in conjunction with the demand for sustainable development. The collective commitment to the environment and sustainable development not only creates a strong team spirit within the organization but also helps to promote cooperation and innovation.

Investing in the development of green human resources not only ensures that organizations progress on the path of sustainable development but also brings many benefits. Only when employees are trained and aware of environmental issues can businesses and organizations reduce negative

impacts on the environment and simultaneously achieve other benefits such as enhancing work efficiency, improving company image, and attracting talented employees.

However, this also faces many challenges such as high initial investment costs and the time needed to implement the transition. To overcome these challenges, strong commitment from leaders and support from senior managers are necessary. In addition, enhancing information and creating awareness about the importance of green human resources is also a key factor in ensuring success in developing a sustainable and competitive organization in the market.

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