

Driving Supply Chain Performance Through Digital HRM: The Mediating Role of Green Orientation and the Moderating Role of Green Innovation

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Abstract:

Purpose: This study aims to test and analyze empirically the role of Digital Human Resource Management (DHRM) on Supply Chain Performance (OP) mediated by Green Orientation (GO) and Green Innovation (GI).

Design/methodology/approach: This study involved supply chain managers in manufacturing companies in DKI Jakarta and West Java Provinces, Indonesia. The reason is that these two provinces had many manufacturing companies and were two of the largest industrial cities in Southeast Asia. Based on the survey conducted, there were 160 questionnaires distributed. However, the data that meets the requirements is 145 and can be processed further. This study used the Structural Equation Model (SEM) analysis technique using Partial Least Square.

Findings: This study has confirmed a number of findings including: (1) Digital HRM had a positive and significant influence on SC performance, (2) Digital HRM had a positive and significant influence on green orientation, (3) Green Orientation had no positive and significant influence on SC performance, (4) Green Orientation did not mediate the effect of Digital HRM on SC performance, (5) Green Innovation had a positive and significant influence on green orientation and Green Innovation did not moderate the influence of digital HRM on SC performance.

Research limitation/implications: This study only focuses on the scope of Digital Human Resource Management (DHRM) on Supply Chain Performance (SCP). The mediating role of Green Orientation and the moderating role of Green Innovation in research findings did not have a significant contribution. The next study is expected to examine the concept of digital HRM which is not only oriented towards green orientation and green innovation in manufacturing companies. Other considerations are needed such as digital entrepreneurship, digital business and digital skills which are currently developing in the world and even in Indonesia. This is because Digital entrepreneurship, digital business and digital skills are one of the supporters of economic growth and company performance in a sustainable manner.

Managerial implication: This study is expected to be a reference for practitioners, especially in the field of Digital Human Resource Management (DHRM) on Supply Chain Performance (SCP). Furthermore, the concept of digital HRM by organizations can be used as an effective alternative in continuously improving SC performance in manufacturing companies in Indonesia.

Theoretical implication: The findings of this research provide a theoretical contribution related to the pattern of relationship between digital HRM and SC performance, although green orientation did not mediate the pattern of relationship between digital HRM and SC performance, likewise, green innovation did not mediate the pattern of relationship between digital HRM and SC performance. However, these two aspects can be an important focus in this research and must be considered for further research.

Originality/value: This study has originality because it examines the role of digital HRM on SC performance which is still very rarely researched especially when it is associated with the mediating role of green orientation and green innovation.

Keywords: digital HRM, green innovation, green orientation, SC performance

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1. Introduction

In the last two decades, the concept of digitization has become one of the most prominent crucial issues to be researched. This shows the rampant increase in the use of technology and the existence of substantial changes in various business domains and people's lives. Within organizations, the concept of digitization has also entered into various domains, starting as a basic marketing, sales and promotion tool, to more complex ones such as the utilization of big data and data-driven business development. Digitalization encourages organizations to continue to develop their best potential through targeted use of technology. Currently, digitization is also starting to be widely used in the field of HRM in organizations, so that a concept called Digital HRM (DHRM) is built. The use of DHRM practices, especially in modern and well-established organizations, has been able to have an impact on HRM effectiveness through internal consistency, namely HRM practices, and externally, namely the social network of HRM managers with line managers.

In simple terms, DHRM refers to the use of digital strategies and technologies to manage the HR function in an organization (Strohmeier, 2020; Varadaraj & Al-Wadi, 2021). In Digital HRM, HR in the organization uses digital tools, software, and platforms to carry out HR processes and activities, enhance positive employee experiences, and improve work efficiency (Küpper, Klein & Völckner, 2021). The DHRM work process takes place through mobile, electronic media, social media, and IT assistance. It is intended to enhance employee experience and organizational success by transforming the Human Resource Management (HRM) function from paper-based, reactive and time-consuming to digital-first, mobile and more optimized.

The positive or negative effects of DHRM practices depend on the condition of HRM in the company and the capability maturity of the human resources themselves (Wang, Zhou & Zheng, 2022). Digitization, despite its various challenges in the industry, is often associated with increasing company success. Digital adoption is currently a major challenge for companies, especially in the era of globalization, where DHRM is seen as increasingly relevant to developments that were previously paper-based, reactive, time-consuming, and require a lot of manpower so that they become digital-first (Thomas, 2020). Today's HRM activities increasingly require digitization to achieve higher effectiveness. Some of them are digital recruitment which can save up to 30 percent time, the use of video conferencing, and advertisements for job vacancies on social media, all of which ultimately help companies make cost savings of up to 90 percent (Melanthiou, Pavlou & Constantinou, 2015; Thomas, 2020). However, the management of industrial companies needs to be careful in adopting these new technologies so as not to jeopardize business processes.

The adoption of DHRM which is also cloud-based allows the HR department to access data anytime and anywhere without downtime. In addition, this digitization can also update the latest information efficiently and easily so that it has an impact on overall organizational performance (Kuzior, Kettler & Raß, 2022; Turulja & Bajgoric, 2018), especially true for SC performance (Sakka, 2018; Nejati, Rabiei & Chiappetta-Jabbour, 2017; Menon, 2012). However, on the other hand, other interesting findings by some researchers also state that DHRM has no effect on organizational performance (Bondarouk & Ruël, 2009; Zafar, 2021). DHRM is an umbrella that includes the integration of traditional HRM systems and information technology that aims to create value for employees and managers, so as to improve organizational performance. These different views and findings form the basis for further research, so that they can confirm findings in different contexts.

The awareness that many parties have of environmental degradation indirectly requires companies to implement new ideas, methods and technologies that focus on environmental aspects. Efficiency-focused use and adoption of DHRM can reduce environmental impact by shifting to digital technologies so as to meet the evolving requirements of the organization and its workforce (Fang, Shi, Gao & Li, 2022). It seems that this is at the same time responding to demands from stakeholders to begin to be oriented towards the environment. DHRM which is closely related to advances in digital technology such as electronic devices, information systems, mobile technology, and big data, has the ability to adopt drastic progress through innovation so that it can affect work and business which has an impact on organizational performance (Jayabalan, Makhbul, Senggaravellu, Subramaniam & Ramly, 2021).

Green innovation is the development and implementation of technology, ideas and practices as a solution to create an environmentally friendly and sustainable climate. Having DHRM in a company can lead to environmental implementation in the form of green innovation (Chen, Wu & Wu, 2015; Zailani, Eltayeb, Hsu & Tan, 2012). Green innovation can moderate the influence of DHRM on organizational performance (Alhadid & Abu-Rumman, 2014; Dahlan & Nurhayati, 2022), also on SC performance (Sakka, 2018; Nejati et al., 2017; Menon, 2012). DHRM can be compatible with environmentally friendly innovations given its ability to increase efficiency, flexibility, and paperless business processes, so that employees are more responsible for the environment (Kuo, Khan, Islam, Abdullah, Pradana & Kaewsang-on, 2022). In addition, DHRM practices are also in line with companies that are environmentally oriented (green orientation). This is because DHRM provides opportunities to optimize HR processes, reduce paper usage significantly, and support a company's sustainability orientation. For this reason, the implementation of DHRM also needs to be aligned with the main objectives of the organization, including paying attention to orientation and innovation carried out with a green concept so that optimal organizational performance can be achieved.

This research is very interesting to study, considering that the concept of DHRM is still new and developing (Kuzior et al., 2022; Strohmeier, 2020). In reality, the practice of DHRM in companies is still in its early stages and has not yet reached a massive development, even though managers and employees have the awareness to implement it. In addition, there is a need to identify factors that mediate the influence of DHRM on organizational performance which is still under-explored (Küpper et al., 2021; Varadaraj & Al-Wadi, 2021), especially SC performance (Sakka, 2018; Nejati et al., 2017; Menon, 2012). Responding to the existing gap, this study specifically considers the role of green orientation in mediating and green innovation in moderating the influence of DHRM on organizational performance in the context of manufacturing companies in emerging markets in Indonesia.

2. Literature Review

2.1. Digital HRM and SC Performance

Digital technology has required companies to carry out a total re-evaluation as well as improve procedures and systems regarding different capacities in their business. This also requires the role of HR who are able to adapt to digitalization in companies to remain relevant in the industry (Jayabalan et al., 2021). This is because digital technology used for HR management is one of the most crucial breakthroughs that can be used to complete work much more effectively (Shouraki, 2022). Technological changes are also currently affecting the running of every process in HRM (Lumi, 2020). Today, the focus of the HR function has shifted from being passive and reactive to being strategic and agile. This shift in essence requires various changes, for example from the side of the workplace that was previously mechanized to become more computerized (Thite, 2022).

Digitalization or digital transformation is something that must be adopted by organizations in order to become more efficient and relevant in the future. This also has an important impact on organizations in helping implement effective digital HRM and be able to improve organizational performance (Halid, Yusoff & Somu, 2020; Varadaraj & Al-Wadi, 2021; Haque & Nishat, 2022). Jayabalan et al. (2021) added that digitization of HRM plays a significant role in improving organizational performance. This influence can occur because digital HRM allows companies to run business more efficiently and productively, increases employee engagement with higher flexibility through remote working, and helps executives in companies make strategic decision-making based on data (Thite, 2022; Lumi, 2020). The HR process can also run more optimally with the use of digitalization, because the work process is able to minimize errors, reduce paperwork, and allow HR to work more focused on their strategic aspects. Sakka (2018) and Nejati et al. (2017) have found results that HR practices can improve SC performance. This finding is also corroborated by Albahussain, Elgaraihy and Mobarak (2016) and Menon (2012) that SC performance is able to mediate HR practices and organizational performance.

H1: Digital HRM influences organizational performance

2.2. Digital HRM and Green Orientation

Environmentally oriented organizations have a commitment to achieve environmental sustainability and carry out special efforts to minimize the company's negative impact on the environment (Yang & Jiang, 2023). This orientation also makes manufacturing companies focus on reducing waste, saving energy, optimizing processes in manufacturing, maximizing resource utilization, and then minimizing the negative impact on the environment (Shuhui, Yu, Rehman-Khan & Abbas, 2020; Dilip-Maruthi & Rashmi, 2015). Increasingly critical environmental issues are urging manufacturing companies to comply with environmentally friendly measures. In particular, manufacturing companies have made efforts to reduce waste and make their manufacturing processes cleaner and greener which can result in better organizational performance (Al-Hakimi, Al-Swidi, Gelaidan & Mohammed, 2022; Al-Swidi, Gelaidan & Saleh, 2021).

Related to this, several studies on environmental management state that employee behavior is very important to improve environmental performance, so green-oriented HR management also has a positive impact on environmental protection (Munawar, Yousaf, Ahmed & Rehman, 2022; Fawehinmi, Yusliza, Wan-Kasim, Mohamad & Sofian-Abdul-Halim, 2020). For this reason, in this era of digital transformation, HRM is also required to be adaptive and qualified in the use of technology, so that it can be in line with the company's special orientation towards the environment (Prass, 2022). The technology used in DHRM such as HR information systems and electronic document management systems can be a solution to reduce paper waste, thereby supporting companies to have a green orientation. In addition, the use of social media as a recruitment channel also allows companies to recruit individuals who have green values or share the same views as the company. Then, DHRM can also use data analytics to make decisions more effectively and on target (Turulja & Bajgoric, 2018; Zameer, Wang, Vasbieva & Abbas, 2021; Bresciani, Huarng, Malhotra & Ferraris, 2021). Therefore, DHRM is predicted to have a significant role in increasing green orientation in companies, by contributing to green practices and sustainability.

H2: DHRM has an influence on green orientation

2.3. Green Orientation and SC Performance

The term 'go-green' is an initiative used by companies to show their orientation towards the environment and efforts to solve environmental problems. Basically, green orientation is seen as capable of leading to efficiency, which in turn increases opportunities to advance organizational performance (Abu-Seman, Govindan, Mardani, Zakuan, Mat-Saman, Hooker et al., 2019). In the current 5.0 industrial revolution, environmental pollution is still a major global problem. In addition, overall economic development may not go hand-in-hand with pollution reduction and sustainable resource management, since the opposite is true.

Limited resources and concern for the environment have made management practices focus on green orientation. Green orientation helps companies demonstrate their commitment to environmental sustainability and implementing more responsible business practices. With a green orientation, companies can reduce environmental impacts such as minimizing pollution, utilizing resources, and reducing waste, which are more beneficial for

improving organizational performance (Albort-Morant, Leal-Millán, Cepeda-Carrion & Henseler, 2018; Wang, Khan, Anwar, Shahzad, Adu & Murad, 2021). Achievement of organizational performance also depends on the company's ability to adapt to changes in the external environment. In this case, green orientation can help companies to respond to demands from consumers who are starting to consider environmental factors when making purchases, where they are looking for products that are more environmentally friendly and sustainable. Green orientation can also strengthen relationships with stakeholders, where currently companies with an orientation and responsibility towards the environment are more valued (Conțu, 2020; Yang, Boen, Gerken, Li, Schorpp & Mullan-Harris, 2016).

Research conducted by Obeidat, Al-Bakri and Elbanna (2020) on managers in oil and gas companies in Qatar shows that an orientation to the environment can improve organizational performance through the role of green HRM and environmental performance. This green orientation is seen as an ethic that is owned by the company in conducting business, and is seen as a positive step by stakeholders. Besides that, research Haque and Nishat (2022) also confirms the positive influence of green orientation on financial performance in 308 companies in China. Research result from Zaid, Jaaron and Talib-Bon (2018) even found that green SCM has a significant positive influence in mediating the relationship pattern between HR practices and sustainable performance.

H3: Green orientation has an influence on SC performance

2.4. The Mediation Role of Green Orientation

Organizational performance is the achievement of organizational goals from various aspects. Overall, organizational performance shows how well the organization achieves in terms of efficiency, effectiveness, productivity, profitability and success of the organization (Obeidat, et al., 2020; Zameer et al., 2021). The concept of performance relates to the financial, operational, customer and employee focus or perspective, to the company's success in responding to demands from its internal and external stakeholders. Companies with optimal performance will have the ability to achieve long-term goals, create value, and achieve competitive advantage over their competitors (Tajeddini, Martin & Ali, 2020; Yu & Huo, 2019). To achieve organizational performance, companies need to provide various efforts that are relevant to the conditions and demands of the internal and external environment (Luu, 2020; Danso, Adomako, Lartey, Amankwah-Amoah & Owusu-Yirenkyi, 2020). Likewise with SC performance, companies must be able to meet the final needs of their customers. Usually it can be measured from the use of minimum inputs, the availability of products or services offered by the company, the delivery of services to customers in a timely and efficient manner, and the availability of value chain capacity that satisfies its customers (Mufaqih, Indarti, Ciptono & Kartikasari, 2017; Muafi & Kusumawati, 2021).

The industrial revolution that has led to industry 5.0 is currently promoting massive digital utilization and adoption, which is aimed at achieving work efficiency and data-based strategic decision making. To face the existing competition and become relevant in the industry, companies are starting to apply the concept of digital HRM, which refers to the use of digital strategies and technologies such as software, platforms and data analytics to carry out HR processes in organizations (Strohmeier, 2020; Varadaraj & Al-Wadi, 2021; Al-Swidi et al., 2021). Digitalization of HRM is predicted to lead to a green orientation because the use of this technology can minimize paper waste, recruit employees who have values or are oriented to the environment, and reduce carbon emissions by holding more virtual meetings than commuting (Trujillo-Gallego, Sarache & Sousa-Jabbour, 2022; Zameer et al., 2021; Bresciani et al., 2021). In the end, the adoption of digital HRM enables companies to improve performance by prioritizing efficiency, productivity, flexibility, and data-based decision making (Thite, 2022; Lumi, 2020; Jayabalan et al., 2021).

H4: Green orientation mediates the influence of digital HRM on SC performance

2.5. Green Innovation and Green Orientation

In the era of the industrial revolution 5.0, companies are facing increasing pressure from the government, investors and customers to solve environmental problems. For this reason, green innovation practices have begun to be intensively conveyed, considering that many stakeholders are starting to pay attention to environmental issues. Green innovation can significantly reduce the pollution of developing companies (Gao & Li, 2021; Coppola, Krick

& Blohmke, 2019). With green innovation, companies are able to minimize environmental impacts through the implementation and development of products, services, processes and technologies that are more creative and sustainable. Companies can develop new technologies, use more environmentally friendly raw materials, and run safer production processes (Song & Yu, 2018). Companies that apply green innovation also have the opportunity to be more environmentally responsible while increasing their competitiveness in the industry.

Green innovation is seen as capable of driving an increase in green orientation in companies. The implementation of green innovation itself can bring companies to have a commitment to environmental sustainability (Zameer et al., 2021; Fatoki, 2021). With this, companies will integrate their principles and values towards the environment, because green innovation has made companies change their production processes and activities. In addition, green innovation is able to increase green orientation by encouraging all parties in the company to think creatively and collaborate to find sustainable solutions (Feng, Zhao, Li & Song, 2018; Yang et al., 2016). Managers and employees will be accustomed to exploring new ideas, changing or modifying existing business practices, and collaborating between departments. All of these things can encourage companies and various parties within them to have a special orientation towards the environment.

H5: Green innovation has an influence on green orientation.

2.6. The Moderation Role of Green Innovation

Academic research on green innovation has grown rapidly in recent years. These studies were conducted to investigate the factors that can sustain and promote green economy transformation (Castellacci & Lie, 2017; Fatoki, 2021; Feng et al., 2018; Zameer et al., 2021). Many investigations have examined the factors that ultimately make companies able to understand the importance of green innovation in their business, such as changes in environmental regulations, the use of environmentally friendly technologies and products, to the reduction of raw material consumption, which can ultimately improve organizational performance (Wang et al., 2021).

Most companies currently reflect environmental management behavior that determines the level of environmental concern in their companies. This is because they have realized that green innovation is very important in business activities, because it is able to save the environment from pollution, save energy, and recycle useless materials (Alhadid & Abu-Rumman, 2014; Chen, Lai & Wen, 2006; Pillania, 2012). Companies can increase productivity and focus on improving products and processes in an environmentally friendly innovation strategy. Green innovation is currently considered a significant predictor of performance (Arsawan, Koval, Duginets, Kalinin & Korostova, 2021; Kraus, Rehman & García, 2020; Fan, Lian, Liu & Wang, 2021). The green innovation strategy is also considered to be able to increase the likelihood of success in the company's external environment. The stronger a company's innovation ability, the more able they are to withstand risk (Cao & Chen, 2019; Rehman, Kraus, Shah, Khanin & Mahto, 2021).

Given the importance of green innovation, its application is seen as being able to strengthen the influence of digital HRM on organizational performance. Organizational performance refers to how well an organization performs its daily tasks and sets goals that are successfully completed. Organizational performance can be seen from four perspectives, namely the perspective of stakeholders, customers, internal processes, and learning and growth (Yang et al., 2016). Green innovation is predicted to strengthen DHRM's relationship to organizational performance because this practice allows companies to carry out business activities that are more efficient, innovative, and cost-effective. The moderating role of green innovation is also expected to occur because it is able to support alignment between HR practices and sustainability, encourage innovation, manage better relations with stakeholders including SC performance.

H6: Green innovation moderates the influence of digital HRM on SC performance.

3. Research Methods

This study used a quantitative approach derived from previous studies, theoretical frameworks, and researchers' understanding based on the phenomena encountered. Then, from these bases the researcher proposed a hypothesis to get verification (justification) or rejection in the field taken in the form of an empirical data document. This

research was conducted using a quantitative approach because it would examine precepts in detail, test hypotheses, and provide arithmetic data to better describe research results (Yang et al., 2016). The purpose of this quantitative research is to establish facts, see relationships between variables, test theories, provide statistical descriptions, and estimate and predict the results obtained.

Research designs that use a quantitative approach must be made standard, formal, structured and designed as carefully as possible so that the research designs produced can become research designs that can be implemented (Tanzeh, 2011). This study used one exogenous variable (X), namely the Digital HRM variable (X1); one endogenous variable namely SC Performance (Y), one moderating variable namely Green Innovation (Z1), and one mediating variable namely Green Orientation (Z2). This study examined the role of the Green Orientation (Z2) variable in mediating the influence of Digital HRM (X1) on SC performance (Y), and the role of the Green Innovation variable (Z1) in moderating the influence of Digital HRM (X1) on SC performance (Y).

The population of this study were all supply chain managers of manufacturing companies in DKI Jakarta and West Java Provinces, Indonesia, who were then selected by purposive sampling method. The researchers provided several criteria, including: (1) the company had implemented digital HRM; and (2) the company implemented green innovation. Based on these criteria, there were 160 companies that met and eventually became the research respondents. The researchers conducted a survey which was attended by all respondents. Of all the data, there were 145 data that could be processed for further analysis.

Data analysis was performed using the SEM (Structural Equation Model) method using the PLS (Partial Least Square) analysis technique. Descriptive statistical analysis and inferential analysis were performed to analyze the data in this study. The model used in this study was the Structural Equation Model (SEM) to examine the relationship between the exogenous variables and the endogenous variable. This study used SEM modeling because it could be used to perform confirmatory factor analysis and path analysis. SEM modeling can be used to perform simultaneous testing of relatively complex sets of relationships (Ferdinand, 2014). SEM modeling in this study utilized Partial Least Square (PLS) analysis with smartpls3.0.

4. Variable Measurement

Testing the validity and reliability was done first by collecting data and empirical analysis. The key variables designed in this study were Digital HRM, SC performance, Green Innovation, and Green Orientation.

The researchers used a Likert measurement scale on the Digital HRM, Green Innovation, and Green Orientation variables with a scale of 1 (strongly disagree) to a scale of 5 (strongly agree) in the questionnaires distributed. The categories of each scale followed (McLeod, 2008). Meanwhile, specifically for SC performance, it used a scale of 1 (very low) to a scale of 5 (very high) when compared with the SC performance of competing companies for the last 3 years. After the questionnaires were distributed, data analysis was carried out using the Structural Equation Modeling (SEM) analysis technique with PLS software to determine the relationship between the variables to be tested. Variables, operational definitions, indicators, measurement scales and reference sources can be seen in more detail in Table 1.

No	Variable and Reference	Operational Definition	Dimensions/Indicators/Items
1.	Digital Human Resource Management (DHRM) (Halid et al., 2020; Haque & Nishat, 2022)	The use of digital strategies and technologies such as software, platforms and data analytics to manage the HR function within an organization	Consists of 7 indicators/items - Digital-recruitment and selection - Digital -training and development - Digital -performance appraisal and management - Digital -compensation management - Digital -compliance management - Digital -communication management - Digital -career management

No	Variable and Reference	Operational Definition	Dimensions/Indicators/Items
2.	Green Orientation (GO) (Guo, Wang & Chen, 2020; Zhao, Feng & Shi, 2018)	the organization's orientation towards environmental sustainability and the organization's priorities for carrying out environmentally responsible business practices.	Consists of 2 indicators - Internal green orientation includes: environmental values, environmental attitudes, and environmental behavior. - External green orientation: external pressure environment, green customer.
3.	Green Innovation (GI) (Tietze & Hansen, 2013; Kucukoglu & Pinar, 2015)	Development and implementation of new products, services, technologies and processes that have a positive influence on the environment.	Consists of 3 indicators - Environmentally sound business practices includes: green processes innovation and green product innovation - Innovation for environmental protection - Environmentally sound products and processes
4.	SC performance (OP) (Muafi & Kusumawati, 2021; Mufaiqih et al., 2017)	The results of the company's work and efforts to meet the needs of end customers from the aspect of product/service availability and on-time and satisfying service delivery.	Consists of 2 indicators - Efficiency input and availability product - On-time service

Table 1. Variable, Operational Definitions, and Dimensions/Indicators/Items

5. Result and Discussion

5.1. Outer Model Evaluation

5.1.1. Validity

Outer model analysis was carried out to test the construct's validity and reliability. Validity testing used convergent validity and construct validity. Convergent validity required that an indicator had to have a loading factor value of ≥ 0.7 so that it could be called a valid indicator. The construct validity required an AVE value ≥ 0.5 so that it could be said to be a valid construct. The test results are shown in Table 2.

Variables	Indicators	Loading Factors	Validity	Loading Factors	Validity	AVE
Digital HRM (DHRM)	DHRM1	0.706	Valid	0.718	Valid	0.541
	DHRM2	0.644	Invalid	Dropped		
	DHRM3	0.797	Valid	0.803	Valid	
	DHRM4	0.764	Valid	0.798	Valid	
	DHRM5	0.807	Valid	0.820	Valid	
	DHRM6	0.625	Invalid	Dropped		
	DHRM7	0.784	Valid	0.793	Valid	
Green Innovation (GI)	GI1	0.844	Valid	0.844	Valid	0.705
	GI2	0.775	Valid	0.775	Valid	
	GI3	0.862	Valid	0.863	Valid	
	GI4	0.847	Valid	0.846	Valid	
	GI5	0.856	Valid	0.857	Valid	
	GI6	0.833	Valid	0.833	Valid	
	GI7	0.858	Valid	0.858	Valid	

Variables	Indicators	Loading Factors	Validity	Loading Factors	Validity	AVE
Green Orientation (GO)	GO1	0.722	Valid	0.736	Valid	0.575
	GO2	0.789	Valid	0.802	Valid	
	GO3	0.811	Valid	0.815	Valid	
	GO4	0.777	Valid	0.784	Valid	
	GO5	0.824	Valid	0.827	Valid	
	GO6	0.381	Invalid	Dropped		
	GO7	0.760	Valid	0.751	Valid	
	GO8	0.817	Valid	0.808	Valid	
	GO9	0.837	Valid	0.835	Valid	
SC Performance (OP)	OP1	0.830	Valid	0.830	Valid	0.645
	OP2	0.770	Valid	0.770	Valid	
	OP3	0.831	Valid	0.832	Valid	
	OP4	0.872	Valid	0.872	Valid	
	OP5	0.814	Valid	0.814	Valid	
	OP6	0.835	Valid	0.835	Valid	
	OP7	0.815	Valid	0.815	Valid	
	OP8	0.744	Valid	0.744	Valid	
	OP9	0.775	Valid	0.775	Valid	
	OP10	0.806	Valid	0.806	Valid	
	OP11	0.733	Valid	0.732	Valid	

Table 2. Validity Analysis

Table 2 shows the outer model evaluation process in this study. The first analysis showed that in the evaluation of convergent validity, three indicators were found that were invalid because they had loading factor values < 0.7 , namely DHRM2, DHRM6, and GO6, so they had to be dropped from the analysis. After removing invalid indicators, it was found that all indicators had a loading factor value > 0.7 and were concluded to be valid. The construct validity analysis was also shown in Table 2 where the AVE value for all variables had a value of > 0.5 so that it was concluded that all variables had met the validity standard.

5.1.2. Reliability

The reliability value refers to the composite reliability value which is required to have a value of ≥ 0.7 and the required Cronbach alpha value of ≥ 0.6 .

	Cronbach's Alpha	Composite Reliability
Digital HRM	0.846	0.890
Green Innovation	0.930	0.944
Green Orientation	0.917	0.932
SC Performance	0.945	0.952

Table 3. Reliability Analysis

Reliability analysis is also needed in this study with reference to the value of composite reliability. Composite reliability values for all variables showed values > 0.7 and Cronbach alpha values had values ≥ 0.6 so it was concluded that the variables in this study were reliable (Hair, Black, Babin & Anderson, 2010).

5.1.3. Inner Model Evaluation

Inner model testing includes several tests, namely the coefficient of determination, goodness of fit, and hypothesis testing. Hypothesis testing was carried out with the PLS bootstrap with the output shown in Figure 1.

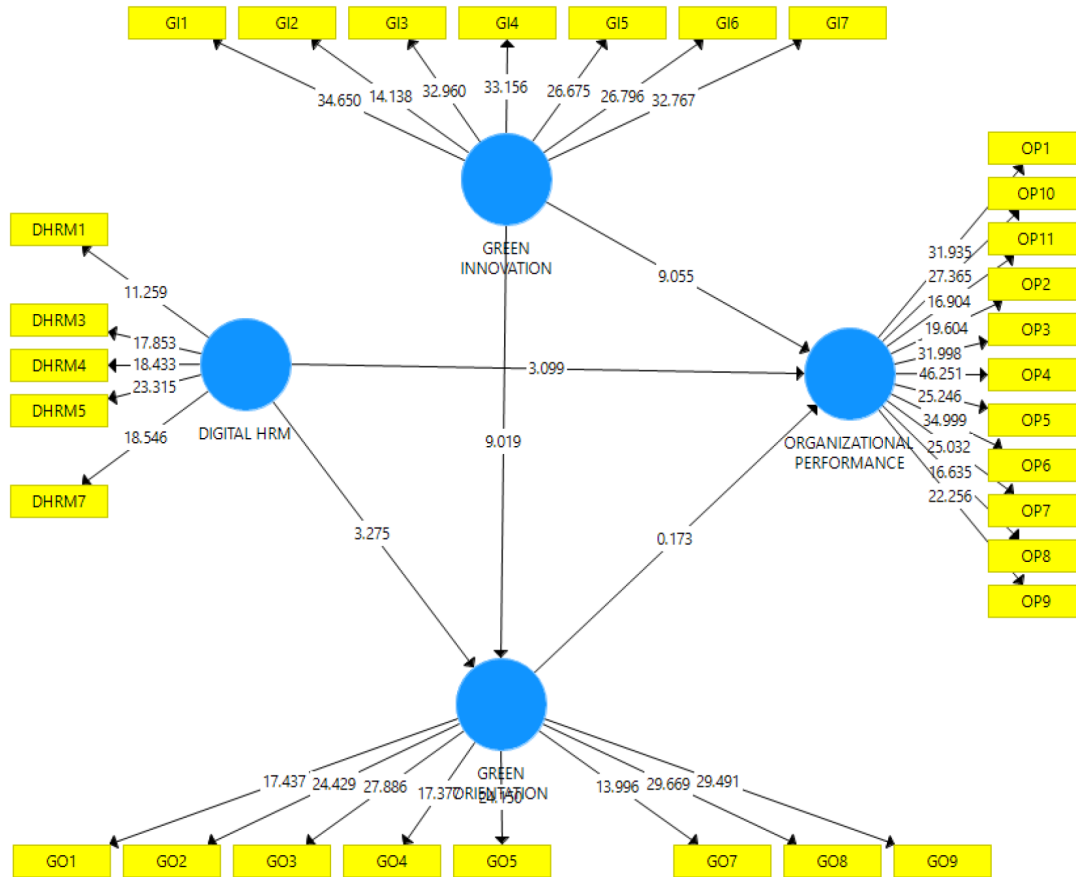


Figure 1. Inner Model

5.1.4. R Square

The coefficient of determination can be seen in the R-square table by multiplying the R-square value by 100%, the coefficient of determination showed the magnitude of the influence of exogenous variables on endogenous variables. The test results for the coefficient of determination are shown in Table 4.

Endogenous Variable	R Square
Green Orientation	0.552
SC Performance	0.601

Table 4. R-Square

Table 4 showed that the green orientation variable was influenced by exogenous variables in this study by 55.2%, then the SC performance variable was influenced by exogenous variables by 60.1%.

5.1.5. Goodness of Fit

The Gof index is calculated from the square root of the average communality index and the average R-squared value. GoF = 0.1 means small, GoF = 0.25 means moderate, GoF = 0.36 means large. The GOF value can be calculated using the formula Goodness of fit = $\sqrt{\text{Communality} \times R^2}$. The calculation results are shown in Table 5.

Construct	Communality	R Square
Green Orientation	0.633	0.552
SC Performance	0.645	0.601
Digital HRM	0.620	
Green Innovation	0.705	
Average	0.650	0.576
Gof	0.611	

Table 5. Result of Goodness of Fit Model (GoF)

Based on Table 5 it can be seen that the GoF value of the model reached 0.611 which was greater than 0.36 so that the model was included in the large category.

5.1.6. Hypothesis Test

The measurement items used are said to be significant if the T-statistic value is greater than 1.96 and the p value is less than 0.05 at a significance level of 5%. Meanwhile, the parameter coefficient that shows the direction of influence is by looking at the positive or negative of the original sample. The results of hypothesis testing are shown in Table 6.

		Original Sample (O)	T Statistics (O/STDEV)	P Values
H1	Digital HRM -> SC Performance	0.256	2.944	0.003
H2	Digital HRM -> Green Orientation	0.231	3.104	0.002
H3	Green Orientation -> SC Performance	0.011	0.141	0.888
H4	Digital HRM -> Green Orientation -> SC Performance	0.002	0.132	0.895
H5	Green Innovation -> Green Orientation	0.592	8.733	0.000
H6	Moderating Effect 1 -> SC Performance	0.056	1.532	0.126

Table 6. Path Coefficients

Table 6 shows the results of the path analysis in this study with the following details:

1. Digital HRM had a positive and significant influence on SC performance. These results were evidenced by the t statistic > 1.96, which was 2.944 and the p-value < 0.05, which was 0.003, so that H1 was accepted.
2. Digital HRM had a positive and significant influence on green orientation. These results were evidenced by t statistic > 1.96, which was 3.104 and the p-value < 0.05, which was 0.002, so H2 was accepted.
3. Green Orientation did not have positive and significant influence on SC performance. These results were evidenced by t statistic < 1.96, which was 0,141 and p-value > 0.05, which was 0.888, so H3 was rejected.
4. Green Orientation did not mediate the influence of Digital HRM on SC performance. These results were evidenced by t statistic < 1.96, which was 0.132 and p-value > 0.05, which was 0.895, so H4 was rejected.

5. Green innovation had a positive and significant influence on green orientation. These results were evidenced by t statistic $> 1,96$, which was 8.733 and p -value < 0.05 , which was 0.000, so H5 was accepted.
6. Green innovation did not moderate the influence of digital HRM on SC performance. These results were evidenced by t statistic $< 1,96$, which was 1.532 and p -value > 0.05 , which was 0.126, so H6 was rejected.

6. Discussion and Implication

The research results explain that Digital HRM had a positive and significant influence on SC performance (H1 was accepted). This supports research and theory from (Shouraki, 2022; Jayabalan et al., 2021; Lumi, 2020; Thite, 2022; Halid et al., 2020; Varadaraj & Al-Wadi, 2021; Haque & Nishat, 2022). Currently HR practices, starting from the recruitment and selection process to performance appraisal and even compensation, can be assisted by digital technology. When a company uses digital HRM, work can be carried out efficiently and effectively (Shouraki, 2022; Jayabalan et al., 2021). The process of running HR practices will be greatly assisted when digital HR can run according to the company's strategic planning (Lumi, 2020). The change in policy and strategy from mechanical to digital has made and demanded organizations to continue to improve for the better (Thite, 2022).

Digital HRM turns out to be able to improve organizational performance (Halid et al., 2020; Varadaraj & Al-Wadi, 2021; Haque & Nishat, 2022; Jayabalan et al., 2021), where strategic decision making can be based on data (Thite, 2022; Lumi, 2020), can reduce errors, reduce waste, and can act more strategically, including being able to increase SC performance (Sakka, 2018; Nejati et al., 2017; Albahussain et al., 2016; Menon, 2012). Therefore, companies should be better able to follow up on this by making strategic decisions related to the flow of goods, information and funding from suppliers to final consumers, all of which require accuracy and thoroughness in terms of human resources based on digital HRM.

The research results prove that Digital HRM had a positive and significant influence on green orientation (H2 was accepted). This supports the theory and research from (Yang & Jiang, 2023; Shuhui et al., 2020; Dilip-Maruthi & Rashmi, 2015; Al-Hakimi et al., 2022; Al-Swidi et al., 2021). By having digital HRM the company can reduce errors and deficiencies compared to when done by conventional HR, especially when it is associated with a company orientation based on greening behavior (Yang & Jiang, 2023). Energy saving behavior, and optimization of inputs and processes from raw materials to finished goods in manufacturing companies can be done by optimizing digital HRM practices. This can be done by maximizing the use of resources and minimizing negative impacts on the surrounding environment (Shuhui et al., 2020; Dilip-Maruthi & Rashmi, 2015; Al-Hakimi et al., 2022; Al-Swidi et al., 2021). When digital HRM can be implemented on target, employees will be able to work adaptively and well in utilizing technology (Prass, 2022). When companies can take advantage of HR information systems and electronic document management systems, companies can reduce paper waste. Likewise, companies can use data analytics to make decisions more effectively and on target (Trujillo-Gallego et al., 2022; Zameer et al., 2021; Bresciani et al., 2021).

The research results show that the company's green orientation did not increase SC performance (H3 was rejected). These findings cannot support the theory and research from (Abu-Seman et al., 2019; Albort-Morant et al., 2018; Wang et al., 2021; Conçu, 2020; Yang et al., 2016; Obeidat, Al-Bakri & Elbanna, 2020; Zaid et al., 2018). It seems that it is necessary to realize that managers of manufacturing companies were not focused on greening behavior to improve SC performance even though the problem of environmental pollution had been a strategic issue globally. The current green orientation should be trusted by stakeholders, especially external customers because it can strengthen the relationship between companies and customers (Conçu, 2020; Yang et al., 2016).

Green orientation research results did not mediate the influence of Digital HRM on SC performance (H4 was rejected). This result means that it does not support the theory and research from (Mufa'iqh et al., 2017; Muafi & Kusumawati, 2021). This means that Digital HRM has a more direct role in SC performance (Shouraki, 2022; Jayabalan et al., 2021; Lumi, 2020; Thite, 2022; Halid et al., 2020; Varadaraj & Al-Wadi, 2021; Haque & Nishat, 2022; Jayabalan et al., 2021) as previously explained in hypothesis 1. Managers of manufacturing companies still thought that when they wanted to improve SC performance, companies were not mediated by green orientation. Likewise, research results show that green innovation did not moderate the influence of digital HRM on SC

performance (H6 was rejected). This perception seems to need changing considering that green orientation can also help companies to be able to provide products/services that can be delivered to customers in a clean and healthy manner as well as on time and efficiently so that customers can be satisfied and want to repeat the transaction. The adoption of digital HRM is expected to improve SC performance by prioritizing efficiency, productivity, flexibility, and data-based strategic decision making (Thite, 2022; Lumi, 2020; Jayabalan et al., 2021). Likewise, green innovation is a strategic and crucial issue in business activities because the company will be able to save the environment (Alhadid & Abu-Rumman, 2014; Chen et al., 2015; Pillania, 2012). Green innovation is currently in great demand by stakeholders so that it can be used as a very significant predictor for improving company performance (Arsawan et al., 2021; Kraus et al., 2020; Fan et al., 2021), including SC performance.

The research results prove that green innovation had a positive and significant influence on green orientation (H5 was accepted). These results support the theory and research from (Gao & Li, 2021; Coppola, Krick & Blohmke, 2019; Zameer et al., 2021; Fatoki, 2021). Companies should consider the crucial aspects of green innovation. When a company is able to produce green-based product and service innovations, it can be used as a strategy to attract customers to re-transact. New technologies can be used using environmentally friendly raw materials so that production can be safer now and in the future (Song & Yu, 2018). Companies have more opportunities to be more environmentally responsible so that they can have SC performance in a sustainable manner.

7. Limitations and Future Research Agenda

1. This study only covered manufacturing companies in general that were not grouped based on the type of manufacturing business in Indonesia, so that in the future they should be grouped based on the type of business. Likewise, this research has not grouped companies based on green-oriented companies by grouping companies that have obtained and have participated in the PROPER program which is the Public Disclosure Program for Environmental Compliance. This is because the company implements a PROPER policy which is closely related to providing environmental information to the public.
2. This study focuses on manufacturing companies that had implemented Digital HRM Human Resource Management (DHRM) practices either totally or partially. This might affect research results especially when it is related to SC performance which is mediated by green orientation and moderated by green innovation.
3. The manufacturing companies studied included two provisions, namely DKI Jakarta and West Java where the sample studied may not be able to generate the characteristics of manufacturing companies in each region. Besides that, it is necessary to consider other variables such as digital entrepreneurship, digital business and digital skills which are currently a strategic issue in sustainable business development.

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References

- Abu-Seman, N.A., Govindan, K., Mardani, A., Zakuan, N., Mat-Saman, M.Z., Hooker, R.E. et al. (2019). The mediating effect of green innovation on the relationship between green supply chain management and environmental performance. *Journal of Cleaner Production*, 229, 115-127. <https://doi.org/10.1016/j.jclepro.2019.03.211>
- Al-Hakimi, M.A., Al-Swidi, A.K., Gelaidan, H.M., & Mohammed, A. (2022). The influence of green manufacturing practices on the corporate sustainable performance of SMEs under the effect of green organizational culture: A moderated mediation analysis. *Journal of Cleaner Production*, 376. <https://doi.org/10.1016/j.jclepro.2022.134346>

- Al-Swidi, A.K., Gelaidan, H., & Saleh, R.M. (2021). The joint impact of green human resource management, leadership and organizational culture on employees' green behaviour and organisational environmental performance. *Journal of Cleaner Production*, 316. <https://doi.org/10.1016/j.jclepro.2021.128112>
- Albahussain, S.A., Elgaraihy, W.H., & Mobarak, A.K.M. (2016). Measuring the Impact of Human Resource Management Practices on Organizational Performance with the Mediating Role of Supply Chain Performance between Them in Saudi Industrial Large Organizations. *Archives of Business Research*, 4(2), 20-36. <https://doi.org/10.14738/abr.42.1915>
- Albort-Morant, G., Leal-Millán, A., Cepeda-Carrion, G., & Henseler, J. (2018). Developing green innovation performance by fostering of organizational knowledge and cooperative relations. *Review of Managerial Science*, 12(2), 499-517. <https://doi.org/10.1007/s11846-017-0270-z>
- Alhadid, A.Y., & Abu-Rumman, A.H. (2014). The Impact of Green Innovation on Organizational Performance, Environmental Management Behavior as a Moderate Variable: An Analytical Study on Nuqul Group in Jordan. *International Journal of Business and Management*, 9(7), 51-58. <https://doi.org/10.5539/ijbm.v9n7p51>
- Arsawan, I.W.E., Koval, V., Duginets, G., Kalinin, O., & Korostova, I. (2021). The impact of green innovation on environmental performance of SMEs in an emerging economy. *E3S Web of Conferences*, 255. <https://doi.org/10.1051/e3sconf/202125501012>
- Bondarouk, T.V., & Ruël, H.J.M. (2009). Electronic human resource management: Challenges in the digital era. *International Journal of Human Resource Management*, 20(3), 505-514. <https://doi.org/10.1080/09585190802707235>
- Bresciani, S., Huarng, K.H., Malhotra, A., & Ferraris, A. (2021). Digital transformation as a springboard for product, process and business model innovation. *Journal of Business Research*, 128, 204-210. <https://doi.org/10.1016/j.jbusres.2021.02.003>
- Cao, H., & Chen, Z. (2019). The driving effect of internal and external environment on green innovation strategy- The moderating role of top management's environmental awareness. *Nankai Business Review International*, 10(3), 342-361. <https://doi.org/10.1108/NBRI-05-2018-0028>
- Castellacci, F., & Lie, C. M. (2017). A taxonomy of green innovators: Empirical evidence from South Korea. In *Journal of Cleaner Production*, 143, 1036-1047. <https://doi.org/10.1016/j.jclepro.2016.12.016>
- Chen, Y.J., Wu, Y.J., & Wu, T. (2015). Moderating effect of environmental supply chain collaboration: Evidence from Taiwan. *International Journal of Physical Distribution and Logistics Management*, 45(9-10), 959-978. <https://doi.org/10.1108/IJPDLM-08-2014-0183>
- Chen, Y.S., Lai, S.B., & Wen, C.T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business Ethics*, 67(4), 331-339. <https://doi.org/10.1007/s10551-006-9025-5>
- Conțu, E.G. (2020). Organizational performance – theoretical and practical approaches; study on students' perceptions. *Proceedings of the International Conference on Business Excellence*, 14(1), 398-406. <https://doi.org/10.2478/picbe-2020-0038>
- Coppola, M., Krick, T., & Blohmke, J. (2019). Feeling the Heat?: Companies are Under Pressure On Climate Change and Need to Do More. *Deloitte Insights*.
- Dahlan, D., & Nurhayati, M. (2022). The Effect of Green Innovation on Organizational Performance: Role of Enterprise Risk Management As A Mediation Variable. *Asean International Journal of Business*, 1(2), 136-148. <https://doi.org/10.54099/aijb.v1i2.187>
- Danso, A., Adomako, S., Lartey, T., Amankwah-Amoah, J., & Owusu-Yirenkyi, D. (2020). Stakeholder integration, environmental sustainability orientation and financial performance. *Journal of Business Research*, 119, 652-662. <https://doi.org/10.1016/j.jbusres.2019.02.038>

- Dilip-Maruthi, G., & Rashmi, R. (2015). Green Manufacturing: It's Tools and Techniques that can be implemented in Manufacturing Sectors. In *Materials Today: Proceedings*, 2(4-5), 3350-3355.
<https://doi.org/10.1016/j.matpr.2015.07.308>
- Fan, F., Lian, H., Liu, X., & Wang, X. (2021). Can environmental regulation promote urban green innovation Efficiency? An empirical study based on Chinese cities. *Journal of Cleaner Production*, 287.
<https://doi.org/10.1016/j.jclepro.2020.125060>
- Fang, L., Shi, S., Gao, J., & Li, X. (2022). The mediating role of green innovation and green culture in the relationship between green human resource management and environmental performance. *PLoS ONE*, 17(9), 1-24. <https://doi.org/10.1371/journal.pone.0274820>
- Fatoki, O. (2021). Environmental orientation and green competitive advantage of hospitality firms in South Africa: Mediating effect of green innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(4), 223.
<https://doi.org/10.3390/joitmc7040223>
- Fawehinmi, O., Yusliza, M.Y., Wan-Kasim, W.Z., Mohamad, Z., & Sofian-Abdul-Halim, M.A. (2020). Exploring the Interplay of Green Human Resource Management, Employee Green Behavior, and Personal Moral Norms. *SAGE Open*, 10(4). <https://doi.org/10.1177/2158244020982292>
- Feng, L., Zhao, W., Li, H., & Song, Y. (2018). The effect of environmental orientation on green innovation: Do political ties matter? *Sustainability (Switzerland)*, 10(12), 1-15. <https://doi.org/10.3390/su10124674>
- Ferdinand, A. (2014). *Metode Penelitian Manajemen Pedoman Penelitian untuk Penulisan Skripsi*. Tesis, dan Disertasi Ilmu Manajemen. Edisi 5 Semarang: Badan Penerbit Universitas Diponegoro.
- Gao, M., & Li, X. (2021). The Environmental Impact of Green Innovation. *SSRN Electronic Journal*.
<https://doi.org/10.2139/ssrn.3955402>
- Guo, Y., Wang, L.F., & Chen, Y. (2020). Green Entrepreneurial Orientation and Green Innovation: The Mediating Effect of Supply Chain Learning. *SAGE Open*, 10(1). <https://doi.org/10.1177/2158244019898798>
- Hair, J.F. Jr., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate Data Analysis* (7th ed.). Essex, UK: Person Prentice Hall.
- Halid, H., Yusoff, Y.M., & Somu, H. (2020). The Relationship Between Digital Human Resource Management and Organizational Performance. *Proceedings of the First ASEAN Business, Environment, and Technology Symposium (ABEATS 2019)*. <https://doi.org/10.2991/aebmr.k.200514.022>
- Haque, M.A., & Nishat, S.S. (2022). The Impact of HRM Digitalization on Employee Performance in the RMG Industry of Bangladesh. *European Journal of Business and Management Research*, 7(4), 192-198.
<https://doi.org/10.24018/ejbmr.2022.7.4.1540>
- Jayabalan, N., Makhbul, Z.K.M., Senggaravellu, S.N., Subramaniam, M., & Ramly, N.A.B. (2021). The Impact of Digitalization on Human Resource Management Practices in the Automotive Manufacturing Industry. *Journal of Southwest Jiaotong University*, 56(5), 524-537. <https://doi.org/10.35741/issn.0258-2724.56.5.48>
- Kraus, S., Rehman, S.U., & García, F.J.S. (2020). Corporate social responsibility and environmental performance: The mediating role of environmental strategy and green innovation. *Technological Forecasting and Social Change*, 160.
<https://doi.org/10.1016/j.techfore.2020.120262>
- Kucukoglu, M.T., & Pinar, R.I. (2015). Positive Influences of Green Innovation on Company Performance. *Procedia - Social and Behavioral Sciences*, 195, 1232-1237.
- Kuo, Y.K., Khan, T.I., Islam, S.U., Abdullah, F.Z., Pradana, M., & Kaewsang-on, R. (2022). Impact of Green HRM Practices on Environmental Performance: The Mediating Role of Green Innovation. *Frontiers in Psychology*, 13(June). <https://doi.org/10.3389/fpsyg.2022.916723>

- Küpper, D.M., Klein, K., & Völekner, F. (2021). Gamifying employer branding: An integrating framework and research propositions for a new HRM approach in the digitized economy. *Human Resource Management Review*, 31(1), 0-1. <https://doi.org/10.1016/j.hrmr.2019.04.002>
- Kuzior, A., Kettler, K., & Raß, Ł. (2022). Digitalization of Work and Human Resources Processes as a Way to Create a Sustainable and Ethical Organization. *Energies*, 15(1), 1-13. <https://doi.org/10.3390/en15010172>
- Lumi, A. (2020). The Impact of Digitalisation on Human Resources Development. *Prizren Social Science Journal*, 4(3), 39-46. <https://doi.org/10.32936/pssj.v4i3.178>
- Luu, T.T. (2020). Integrating green strategy and green human resource practices to trigger individual and organizational green performance: the role of environmentally-specific servant leadership. *Journal of Sustainable Tourism*, 28(8), 1193-1222. <https://doi.org/10.1080/09669582.2020.1729165>
- McLeod, S. (2008). *Likert scale definition, examples and analysis*. Simply Psychology.
- Melanthiou, Y., Pavlou, F., & Constantinou, E. (2015). The Use of Social Network Sites as an E-Recruitment Tool. *Journal of Transnational Management*, 20(1), 31-49. <https://doi.org/10.1080/15475778.2015.998141>
- Menon, S.T. (2012). Human resource practices, supply chain performance, and wellbeing. *International Journal of Manpower*, 33(7), 769-785. <https://doi.org/10.1108/01437721211268311>
- Muafi, & Kusumawati, R.A. (2021). A nexus between green HRM (GHRM), supply chain performance (SCP) and business performance (BP): The mediating role of supply chain organizational learning (SCOL). *Journal of Industrial Engineering and Management*, 14(2), 329-344. <https://doi.org/10.3926/jiem.3339>
- Mufaqih, I.A., Indarti, N., Ciptono, W.S., & Kartikasari, A. (2017). Pengaruh integrasi, berbagi informasi, dan penundaan pada kinerja rantai pasokan: Studi pada usaha kecil menengah batik di Indonesia. *Jurnal Siasat Bisnis*, 21(1), 19-36. <https://doi.org/10.20885/jsb.vol21.iss1.art2>
- Munawar, S., Yousaf, D.H.Q., Ahmed, M., & Rehman, D.S. (2022). Effects of green human resource management on green innovation through green human capital, environmental knowledge, and managerial environmental concern. *Journal of Hospitality and Tourism Management*, 52(September), 141-150. <https://doi.org/10.1016/j.jhtm.2022.06.009>
- Nejati, M., Rabiei, S., & Chiappetta-Jabbour, C.J. (2017). Envisioning the invisible: Understanding the synergy between green human resource management and green supply chain management in manufacturing firms in Iran in light of the moderating effect of employees' resistance to change. *Journal of Cleaner Production*, 168, 163-172. <https://doi.org/10.1016/j.jclepro.2017.08.213>
- Obeidat, S.M., Al-Bakri, A.A., & Elbanna, S. (2020). Leveraging “green” human resource practices to enable environmental and organizational performance: Evidence from the Qatari oil and gas industry. *Journal of Business Ethics*, 164, 371-388. <https://doi.org/10.1007/s10551-018-4075-z>
- Pillania, R.K. (2012). Why & performance impact of green management & sustainability in India. *Journal of Advanced Research in Management (JARM)*, 3(05), 46-58. <https://doi.org/10.2478/v10260-012-0002-0>
- Prass, A.B. (2022). *Peran HRM dalam Menghadapi Transformasi Digital*. Krjogja.Com. Available at: <https://www.krjogja.com/Angkringan/Read/481480/Peran-Hrm-Dalam-Menghadapi-Transformasi-Digital>
- Rehman, S.U., Kraus, S., Shah, S.A., Khanin, D., & Mahto, R.V. (2021). Analyzing the relationship between green innovation and environmental performance in large manufacturing firms. *Technological Forecasting and Social Change*, 163. <https://doi.org/10.1016/j.techfore.2020.120481>
- Sakka, S.E. (2018). Impact of green human resource management (GHRM) practices. *Global Journal of Human Resource Management*, 6(3), 70-78.
- Shouraki, M.K. (2022). *Digital Sustainable Human Resource Management Model Based on Dynamic Capabilities*, 105(31), 65-101. <https://doi.org/10.22054/jmsd.2022.66456.4113>

- Shuhui, Y., Yu, Z., Rehman-Khan, S.A., & Abbas, H. (2020). Effect of Green Practices on Organizational Performance: An Evidence from Pakistan. *Journal of Advanced Manufacturing Systems*, 19(2), 291-308. <https://doi.org/10.1142/S0219686720500158>
- Song, W., & Yu, H. (2018). Green Innovation Strategy and Green Innovation: The Roles of Green Creativity and Green Organizational Identity. *Corporate Social Responsibility and Environmental Management*, 25(2), 135-150. <https://doi.org/10.1002/csr.1445>
- Strohmeier, S. (2020). Digital human resource management: A conceptual clarification - Stefan Strohmeier, 2020. *German Journal of Human Resource Management*, 34(3), 345-365. Available at: <https://journals.sagepub.com/doi/full/10.1177/2397002220921131>
- Tajeddini, K., Martin, E., & Ali, A. (2020). Enhancing hospitality business performance: The role of entrepreneurial orientation and networking ties in a dynamic environment. *International Journal of Hospitality Management*, 90. <https://doi.org/10.1016/j.ijhm.2020.102605>
- Tanzeh, A. (2011). *Metodologi Penelitian Praktis*, Cet. I. Yogyakarta: Teras.
- Thite, M. (2022). Digital human resource development: where are we? Where should we go and how do we go there? *Human Resource Development International*, 25(1), 87-103. <https://doi.org/10.1080/13678868.2020.1842982>
- Thomas, G. (2020). Digital Maturity of HR in SMEs. *European Journal of Economics and Business Studies*, 6(1), 56. <https://doi.org/10.26417/ejes.v6i1.p56-62>
- Tietze, F., & Hansen, E.G. (2013). To Own or to Use? How Product Service Systems Facilitate Eco-Innovation Behavior. *2013 Academy of Management Conference*. Orlando, Florida. <https://doi.org/10.2139/ssrn.2244464>
- Trujillo-Gallego, M., Sarache, W., & Sousa-Jabbour, A.B.L. (2022). Digital technologies and green human resource management: Capabilities for GSCM adoption and enhanced performance. *International Journal of Production Economics*, 249, 10851. <https://doi.org/10.1016/j.ijpe.2022.108531>
- Turulja, L., & Bajgoric, N. (2018). Information technology, knowledge management and human resource management: Investigating mutual interactions towards better organizational performance. *VINE Journal of Information and Knowledge Management Systems*, 48(2), 255-276. <https://doi.org/10.1108/VJIKMS-06-2017-0035>
- Varadaraj, D.A., & Al-Wadi, D.B.M. (2021). A Study on Contribution of Digital Human Resource Management towards Organizational Performance. *The International Journal of Management Science and Business Administration*, 7(5), 43-51. <https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.75.1004>
- Wang, H., Khan, M.A.S., Anwar, F., Shahzad, F., Adu, D., & Murad, M. (2021). Green Innovation Practices and Its Impacts on Environmental and Organizational Performance. *Frontiers in Psychology*, 11(January). <https://doi.org/10.3389/fpsyg.2020.553625>
- Wang, L., Zhou, Y., & Zheng, G. (2022). Linking Digital HRM Practices with HRM Effectiveness: The Moderate Role of HRM Capability Maturity from the Adaptive Structuration Perspective. *Sustainability (Switzerland)*, 14(2). <https://doi.org/10.3390/su14021003>
- Yang, Y., & Jiang, Y. (2023). Does suppliers' slack influence the relationship between buyers' environmental orientation and green innovation? *Journal of Business Research*, 157(December), 113569. <https://doi.org/10.1016/j.jbusres.2022.113569>
- Yang, Y.C., Boen, C., Gerken, K., Li, T., Schorpp, K., & Mullan-Harris, K. (2016). Social relationships and physiological determinants of longevity across the human life span. *Proceedings of the National Academy of Sciences of the United States of America*, 113(3), 578-583. <https://doi.org/10.1073/Pnas.1511085112>
- Yu, Y., & Huo, B. (2019). The impact of environmental orientation on supplier green management and financial performance: The moderating role of relational capital. *Journal of Cleaner Production*, 211, 628-639. <https://doi.org/10.1016/j.jclepro.2018.11.198>

- Zafar, N. (2021). The Impact Of Electronic Human Resource Management To HR Effectiveness Towards The Organizational Performance (Growing Role In Private Sector). *Jebn.Pk*, 1(1), 20-35. <http://jebv.pk/index.php/JEBV/article/view/2>
- Zaid, A.A., Jaaron, A.A.M., & Talib-Bon, A. (2018). The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study. *Journal of Cleaner Production*, 204(August), 965-979. <https://doi.org/10.1016/j.jclepro.2018.09.062>
- Zailani, S.H.M., Eltayeb, T.K., Hsu, C.C., & Tan, K.C. (2012). The impact of external institutional drivers and internal strategy on environmental performance. *International Journal of Operations and Production Management*, 32(6), 721-745. <https://doi.org/10.1108/01443571211230943>
- Zameer, H., Wang, Y., Vasbieva, D.G., & Abbas, Q. (2021). Exploring a pathway to carbon neutrality via reinforcing environmental performance through green process innovation, environmental orientation and green competitive advantage. *Journal of Environmental Management*, 296. <https://doi.org/10.1016/j.jenvman.2021.113383>
- Zhao, Y., Feng, T., & Shi, H. (2018). External involvement and green product innovation: The moderating role of environmental uncertainty. *Business Strategy and the Environment*, 27(8), 1167-1180. <https://doi.org/10.1002/bse.2060>

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