

International Journal of

INTELLIGENT SYSTEMS AND APPLICATIONS IN **ENGINEERING**

ISSN:2147-6799 www.ijisae.org **Original Research Paper**

The Moderating Effects of Ecological Workforce Management on the Association Among Aligned Variables in Ecological Performance in the **Manufacturing Industry.**

M.Suba¹, S.B.Inayath Ahamed*²

Submitted: 15/11/2022 Accepted: 14/02/2023

Abstract: green human resource management is a recent and most important topic in every organization. At present every individual is focusing on eco-friendly activities and products of every manufacturing organization. Due to some climate changes, like global warming and various types of pollution we are in the stage of taking care of the environment. As a consequence, most organizations are following some steps to reduce the negative impacts on nature. In this article, the researcher wants to examine the relationship among some measurements related to ecological personnel management in the textile industry. The researcher used SPSS for the representation. This article shows the relationship impacts transactional leadership, ecological contrivances, and observed managerial prop-ups to betterment the result of the environmental performance of the organization through ecological manpower management.

Keywords: green human resource management, transformational leadership, green organizational performance

1. Introduction

The word ecological manpower administration has become the buzzword in organizations now and it is importantly growing various in past. Ecological manpower management has besides its safety place as the main subject in current studies seeing that the awareness of green administration, as well as feasible advancement, have grown progressively all over the world. At present, the study of ecological manpower administration not for entails knowledge on the way to ecological proceedings, but additionally exits towards communal and financial advancement of both the firm as well as workers in the vaster possibility. Textile industries are one the most significant and are upgrading day by day because of day-by-date needs and culture. It's always increasing its production and outcome. And in the increasing awareness of green management the textile industry also following green rules and regulations, Ecological manpower management is a utilization of personnel administrative regulations to develop the feasible utility of assets in business as well as, commonly advance the reasons for ecological feasibility. Ecological manpower management is sprightly accountable for making a work plan that apprehends, welcomes, and regulations ecological drives and owns its eco-friendly obligations all about the personal management proceeds of selecting, staffing,

2. Significance of the Green Concept in Human **Resource Management**

The last twenty years have certified a consonant unanimity towards the requirement of attainable ecological administration deals throughout the globe. This effect has taken from the detrimental effects of various defilements among the waste being the most problem that has been worsening and expanding the natural assets fast has been apparent. Magna Carta on the human environment has acknowledged in the first US conference on the human environment in June 1972 in Stockholm professed that preserving as well as developing the manpower environment within now and upcoming generations have Gott a critical aim for people. The ecological human resource management review is majorly a westward one as well as, inclined the significance of Asian financial improvement towards the ecological administration. Studies management all over the globe is now studying different administrative policies that will offer the attainment of the objectives of ecological human force administration as well as have an important effect on the ecological determinations of the business.

improvising, compensating, and advancing the association's workforce. This discusses the rules and regulations and orders that create workers of the business eco-friendly towards the advantage of everyone, the community, nature as well as the firm.

¹ Kalasalingam Academy of Research and Education, Krishnankoil-626126, Tamilnadu, INDIA

² Kalasalingam Academy of Research and Education, Krishnankoil-626126, Tamilnadu, INDIA

^{*}Corresponding Author Email: suba.gajalakshmi@gmail.com

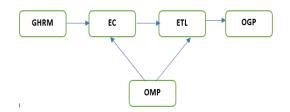
2.1. Eco-Friendly Start-Up Toward Human Resource

Businesses commonly systemized personal management policies into groups that are changeless in their routines as well as in firms' action plans. The study discusses that ecofriendly start-ups encore compass human force management pronouncement also have a participation in social accountability in protracted. At present, the business is adopting as well as fusing with their regular schedule with the help of their executors. The work assigners create clear commitments that their workforce management is using eco-friendly manpower administrative practices in a suitable way. While that postlude to the pronouncement, various studies recommend that it is significant to improve a major work in esoteric as well as administrative capabilities together with every worker in the firm to apply for a productive society's eco-friendly administration orders in business. Businesses all over the globe are comprising with operating for accomplishing green workforce management policies to attain business benefits in the business world. Overall implementation, as well as the assimilation of ecological workforce management in corporate, is also possible however needs a modified converge regarding the previous manpower management policies in a portion of administration and workers concurrently. An important part of human resource ecological administrators might be to lead the work schedulers in the way of getting every employee coordination so as to approach ecological practices that means personal management requires providing partisans as well as making groups of executor's personal intention to work to modify the current situation. There exist various problems connected to ecological manpower management is employed responsibly by human resources heretofore applying eco-friendly start-ups as well as, and everything could not consist in one statement.

2.2. Aim of This Article

Ecological manpower management is a major topic and it has various elements. This study is mainly focusing on the following dimensions and their impact on ecological workforce management. The study needs to list out the main concepts of ecological manpower management secondly it likes to highlight what are all the ecological contrivances to implementing ecological manpower management in organizations for betterment. The study highlights transactional leadership and how it's impacting green organizational performances, and finally how the observed managerial prop-up is relating to ecological contrivances and ecological transactional leadership in green organizational performance.

2.3. Proposed Conceptual Model



3. Ecological Contrivance

The role of ecological contrivance is generally separated into two classes. The main definition of ecological contrivance is an organization's capabilities Gluch et al., 2009, conversely, the next ecological contrivance is a business's ecological policies, Lin and Ho,2008; Ho et al.,2009. As far as managerial policies, ecological contrivance as the hardware or software invention relates to ecological materials as well as procedures Song and Yu,2018; it has schemed that EC encompasses organizations' policies as well as industrial upgrading that extend the ecological as well as managerial outcomes Rennings, 2000. Some studies suggested that ecological contrivance comprises exceptional or reformed methods, procedures, materials as well as policies that give improvements to the ecology and then contribute organization's feasibility Xie et al., 2019. At present reviews describe ecological contrivance as the fresh and changed materials, as well as procedures, encompass methodology, organizational, also managerial inventions, which assist to conserve the environment Ilvitskaya and Prihodko, 2018. However, ecological contrivance might suggest inventive start-ups that lessen the chances of damaging the environment and that equals ecological advancement as it makes value for the products Chen et al.,2006. Ecological contrivance is separated into two parts ecological material innovation and applying green processes Tang et al., 2018. Nevertheless, as a result of raising consumer-main percipience concerning preservation, eco-friendly administration has been a censorious role of some organizations' deliberate practices as well as strategic proposals Chiou et al., 2011; Khan et al., 2019. Regularities connected to the ecological might guide onto mutually beneficial circumstances Chan et al., 2018 from the start they act on two targets, raising benefits as well as reducing the contamination; this is planned the ecological contrivance must be classified specifically from another inventive directs from it collecting a spillage result towards expedition and also extant the effect as well as propitious outside belongings like as expansions in the exosphere Kammerer, 2009. According to Feng et al, 2018 Chinese organizations have said that the inner and exterior ecological alignment is important and related to ecological contrivance strategies. The usage of EC policies internal as well as external organization rules are critical for impinging financial and also eco-friendly performance targets Khan

and Oianli 2017; Saeed et al.,2018. However, Lee et al,2018 constituted that shareholders' forcing, management support as well as communal obligations were important in the engagement for implementing EC and also communal ecological accountability Shahzad F, et al., 2020. According to Fernando et al,2019 defines EC, rules, supporters intercession, as well as methodology, have a major control on feasible performance led to provide invention abilities. Famiyeh et al., 2018 additionally prop-up ecological policies, saying that ecological administrative strategies have overall beneficial advancement on ecological performance. Xie et al.,2019 utilized eco-friendly materials as an arbitrator towards the ecological procedure invention as well as the green performance of firms.

4. Ecological Transformational Leadership

Accordance with Chen and Chang 2013 says that leadership, as well as business prospects through the green deal with dominion environmental thinking, ecological transactional leadership (ETL), motivates workers to commit to showing eco-friendly attitudes, which conclusively prepares the attitudes of concentration on the ecology through they can protecting towards natural resource consumption in a better way which may be reused as well as stay ecologically Mittal and Dhar, 2016; li et al., 2020. The coming study holds up the discussion that eco-friendly leadership as well as other elements performing in improving ecological attitudes Mittal and Dhar, 2015; Tuan, 2019; Singh et al., 2020. Even when ecological transactional leadership is a censorious element of every organization to follow ecological contrivance li et al., 2020; Singh et al., 2020, the connection between eco-friendly transactional leadership and also an ecologically assimilated improvement strategies, as well as administrative method, has been discussed by many studies Chen,2011; Garg and Dhar,2014; Singh et al.,2020. ETL showed in these studies, in the time reviews, it is instituted to encompass a provisory part combined with arbitrating role Li et al., 2020; Singh et al., 2020. Nevertheless, there is restfully a requirement to creep up besides analytical proof of a way through line among ecological transactional leadership on workers engagement and the implied consequences of ETL on managerial performance, like as lessening the power utilization as well as upgraded reproducing effectiveness, has been considered Chen, 2011; Mittal and Dhar, 2016; Li et al., 2020. The part of transactional leaders is most important in making as well as constructing the viewpoint that guides to pre-emptive stages onto the various responsibilities as well as attaining ecological affairs onto eco-friendly ambitions Bass, 2000; Sun et al., 2022. Additionally, transactional leaders hold up the civilization of inventive ideologies, the accomplishment of such ideology in the denomination of strategies, as well as construct a system of "ingenuity- embellishing services" Sun et al., 2022. The work of transactional leadership is extremely significant in the achievement of creative organizational ideologies Elkins, Keller, 2003; Rehman et al., 2012; Sun et al.,2022. Few impressions, the representations of transactional leadership in development are besides awfully determining however stilly reduce concentrated internationally, especially in an improving place Sun et al., 2022.

5. Observed Managerial Prop-Up Toward the Environment

Ramus and Steger 2000 describe OMP-E while the magnitude to which management improves workers' maintainable works the way of propitious policies (knowledge sharing, appreciation, as well as accreditation) as assist workers to apprehend as well as perform ecofriendly practices. The concept of managerial prop-up has emerged with raising engrossment in applying green policies in business Paille et al., 2013. OMP-E is consistently delimited while workers notions consideration business protects close by ecological problems, then creates corollary to give the resources required to assist workers commitment in workstation surrounding actions Lamm et al., 2015. Through to workers, OMP-E is an utterance whereby business conforms they are engaged by providing required resources to lead workers to act in the ecological process. Lamm et al. 2015 additionally confirm that OMP is different from OMP-E because they are fulfilling different requirements. The way that provides hold-up is alike. OMP as well as OMP-E vary in their terms as well as an object like concentrating on society and environmental situations. The discrepancy produces a considerable variance in the part that works when businesses find out the ecological problems. On the way through OMP, the managers showed the level to which they heed workers by authorizing as well as concerning their commitments for feasibility, persistent however the prior is not exactly fretful along the need to consecrate resources for the preservation of the global resources, over with OMP-E, the worker not merely preserves feasibility as a receptive inducement, as well as improves the preservation of ecological is a problem of deliberation, in spite of that additionally equips resource in every management stages to prop up these eco-friendly aims.

6. Organizational Feasible Performance

The word business performance is described as a value of managerial effects to dictate, applying as well as follow business practices efficiently David, 2011. Generally, the subject of firms' performance is too frequently estimated to the ecological performance. The conception of managerial performance is always assessed to the economic performance, the result of managerial performance has always been deliberated with the economical recommended

pointers like as get back on investments, sales, and return per share Morin, 1995. And also, progressively businesses' watching modified for the feasible organizational performance away from the economic performance Lee and Sean, 2011. The feasible performance of an organization is decided in accordance with its financial, eco-friendly, and communal performance Lee and Sean, 2011. The Global reporting initiative gives a willing informative report that contains targets as well as functionalized pointers with compliments to ecological, financial, and societal performance Global Reporting Initiative, 2017. ecological measures of feasibility affect the firm's collision of living and non-living methods, encompassing all-natural resources and the environment. The societal measures of feasibility effects the collisions. The business has the societal models in which it works. The communal segment comprises the sub-divisions: work plans and clean work allocation, worker rights, and societal as well as material accountability Global Reporting Initiative, 2017. The financial measures of feasibility deal with the firm's accident on the financial rules of its shareholders, as well as in the financial structure at every stage Global Reporting Initiative, 2017.

The global reporting initiatives are always the receptacle towards the synthesized feasible improvement list which is contained in the financial sub-list, the eco-friendly sub-list as well as the societal sub-list Krajnc and Glavic, 2005. These sub-indexes are in the way contain relatively" formalized finance system, ecological as well as societal pointers retrieved from another structure comprises GRI" Krajnc and Glavic, 2005. The BSC comprises 4 attributes economical, consumer, internal procedure training as well as an upgrade towards which performance measures establish changes among practices as well as functions Kaplan and Norton, 1996. The BSc is an open method in what all shareholder activities may be comprised if they are significant towards the accomplishment of a practice. Hence, incorporating the ecological targets, BSC may be extended as the feasibility Moller and Scaltegger, 2005. To lead the FBSC both paths might be transpired. The first way is incorporating the ecological targets of the following performance assessment of the BSC. The second way is additionally an assessment of the ecological examines Krajnc and Glavic, 2005.

7. The Consequences of Measurement Model

SPSS statistics 23 is used for calculating factor analysis. All measures were used to calculate through Cronbach's alpha and tested by CFA. The experimental study is a conceptual consequence, the study precipitates 25 items toward the perception of manpower. The questionnaires were used to examine green human resource management (5 items), ecological contrivances (5 items), ecological transactional

leadership (6 items), observed managerial prop-up, (6 items), and organizational management practices (4 items) utilized. These questionnaires were deliberated with the above factors.

Mean, standard deviation, and correlation coefficient

	Mean	SD	A	В	C	D
GERM	5. 456	0.83214				
EC	5.326	0.76354	.617			
ETL	5.423	0.72263	.606	.676**		
OMP	5.241	0.83869	.426	.578**	.675**	
OGP	5.356	0.85767	.617	.568**	.687**	.617**

Factor anaysis of this study

Constructs	Number of items	Number of factors	Acculation percentage of explained variance
Green human resource management	4	1	64.6%
Ecological contrivances	5	1	60.8%
Ecological transactional leadership	6	1	63.8%
Organizational green performance	4	1	62.2%
Observed managerial prop-up	6	1	63.2%

Cronbach's a was calculated to estimate the reliability estimate. The Cronbach's coefficient of "Green human resource management (GHRM)" was 0.867; that of "ecological contrivances (EC)" was 0.952; that of "ecological transactional leadership (ETL)" was 0.957, that of organizational green practices (OGP)" was 0.953 and observed Managerial prop-up was (OMP) 0.956. Because Cronbach's coefficient of all constructs exceeded 0.7, the measurement was considered reliable. With the use of CFA. This article measures the validity of five constructs. Two measures have been used to apply to verify construct validity. First, the AVE measures the variance confined by the construct in the connection between the variance due to measurement error, and the research utilized AVE to estimate discriminate validity Fornell and Larcker 1981. For prejudiced efficacy. √ AVE of each construct must surpass the relationship among every system construct and others. The consequences indicate that the magnitude converges to appealing psychological interactions. The factor loading AVE and construct reliability, and displays that the AVEs of the Five constructs are 0.678, 0.768, 0.826, 0.862, and 0.797, orderly. All five constructs thus contain AVE that surpasses 0.5 and the construct has supported concurrent validity.

The items loadings λ and the constructs Cronbach's α coefficient and AVEs.

Constructs	Items	ì	Cronbach's α	CR	AVE	The square root of AVE
Green Human	GHRM1	0.728				
Resource	GHRM2	0.776	0.867	0.868	0.678	0.82
Management	GHRM3	0.846				
	GHRM4	0.899				
Ecological	EC1	0.836				
contrivances	EC2	0.865				
	EC3	0.892	0.932	0.943	0.768	0.867
	EC4	0.842				
	EC5	0.910				
Ecological	ETL1	0.935				
transactional	ETL2	0.956				
leadership	ETL3	0.906	0.957	0.965	0.826	0.925
	ETL4	0.856				
	ETL5	0.924				
	ETL6	0.867				
Organizational	OGP1	0.886				
Green	OGP2	0.916	0.953	0.938	0.862	0.915
performance	OGP3	0.942				
-	OGP4	0.816				
Observed	OMP1	0.882				
managerial	OMP2	0.886				
prop-up	OMP3	0.920	0.956	0.956	0.797	0.866
	OMP4	0.906				
	OMP5	0.887				
	OMP6	0.892				

Regression analysis

Hypothesis	Relationship	St. Beta	St. Error	t.value	Discussion
H1	EC->GHRM	0.53	0.64	0.802	Supported
H2	ETL->GHRM	0.285	0.083	3.423	Supported
H3	OGP->GHRM	0.170	0.072	2.356	Supported
H4	OMP->GHRM	0.135	0.075	1.705	Supported

The table represents that every variable has positively connected with another variable so all hypothesis has been accepted

8. Conclusion

Ecological manpower management is not only a topic its practices should follow by organizations which are all want to contribute to society. Every management should be run only by their employees the best and worst organizational performance only be based on their workers. The workers are categorized by their educational qualities, experience, and the role they are working in the firm. But in nature coordination among workers is the most important thing to achieve the targets. in this study the research has examined four elements of ecological human resource management there are ecological contrivances, transactional leadership, observed managerial prop-up, and organizational green

practices. The analysis represents all variables are positively connected with other.

Acknowledgements

I am grateful to Dr.S.B. Inayath Ahamed and Kalasalingam Academy of Research and Education for the support to complete this paper and in that line improved the manuscript significantly.

Author contributions

M.Suba Conceptualization, Methodology, Software, Field study **S.B. Inayath Ahamed** investigation, editing

Conflicts of interest

The authors declare no conflicts of interest.

References

- [1] Bass, B. M. (2000). The future of leadership in learning organizations. J. Lead. Stud. 7, 18–40. doi: 10.1177/107179190000700302.
- [2] Chan, H.-L., Shen, B., and Cai, Y. (2018). Quick response strategy with cleaner technology in a supply chain: coordination and win-win situation analysis. Int. J. Prod. Res. 56, 3397–3408. doi: 10.1080/00207543.2016.1278283.
- [3] Chen, Y. S., and Chang, C. H. (2013). The determinants of green product development performance: green dynamic capabilities, green transformational leadership, and green creativity. J. Bus. Ethics 116, 107–119. doi: 10.1007/s10551-012-1452-x
- [4] Chen, Y.-S. (2011). Green organizational identity: sources and consequence. Manage. Dec. 49, 384–404. doi: 10.1108/00251741111120761
- [5] Chen, Y.-S., Lai, S.-B., and Wen, C.-T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. J. Bus. Ethics 67, 331– 339. doi: 10.1007/s10551-006-9025-5.
- [6] Co, H., and Barro, F. (2009). Stakeholder theory and dynamics in supply chain collaboration. Int. J. Oper. Prod. Manage. 29, 591–611. doi: 10.1108/01443570910957573.
- [7] David, F.R. (2011), Strategic Management: Concepts and Cases, Global ed., 13th ed., Pearson Education, Upper Saddle River.
- [8] Elkins, T., and Keller, R. T. (2003). Leadership in research and development organizations: a literature review and conceptual framework. Leadersh. Q. 14, 587–606. doi: 10.1016/S1048-9843(03)00053-5.
- [9] Famiyeh, S., Adaku, E., Amoako-Gyampah, K., Asante-Darko, D., and Amoatey, C. T. (2018).

- Environmental management practices, operational competitiveness and environmental performance: empirical evidence from a developing country. J. Manuf. Technol. Manage. 29, 588–607. doi: 10.1108/jmtm-06-2017-0124.
- [10] Feng, L., Zhao, W., Li, H., and Song, Y. (2018). The effect of environmental orientation on green innovation: do political ties matter? Sustainability 10:4674. doi: 10.3390/su10124674.
- [11] Fernando, Y., Jabbour, C. J. C., and Wah, W.-X. (2019). Pursuing green growth in technology firms through the connections between environmental innovation and sustainable business performance: Does service capability matter? Resour. Conserv. Recyl. 141, 8–20.
- [12] Gluch, P., Gustafsson, M., and Thuvander, L. (2009). An absorptive capacity model for green innovation and performance in the construction industry. Constr. Manage. Eco. 27, 451–464. doi: 10.1080/01446190902896645.
- [13] Gluch, P., Gustafsson, M., and Thuvander, L. (2009). An absorptive capacity model for green innovation and performance in the construction industry. Constr. Manage. Eco. 27, 451–464. doi: 10.1080/01446190902896645.
- [14] Ilvitskaya, S., and Prihodko, V. (2018). Innovative technologies in the field of topography, land management, territorial planning, construction and architecture. IOP Conf. Ser. Mater. Sci. Eng. 365:022030. doi: 10.1088/1757-899x/365/2/022030.
- [15] Ilvitskaya, S., and Prihodko, V. (2018). Innovative technologies in the field of topography, land management, territorial planning, construction and architecture. IOP Conf. Ser. Mater. Sci. Eng. 365:022030. doi: 10.1088/1757-899x/365/2/022030.
- [16] Kammerer, D. (2009). The effects of customer benefit and regulation on environmental product innovation.: empirical evidence from appliance manufacturers in germany. Ecol. Eco. 68, 2285–2295. doi: 10.1016/j.ecolecon.2009.02.016.
- [17] Kammerer, D. (2009). The effects of customer benefit and regulation on environmental product innovation.: empirical evidence from appliance manufacturers in germany. Ecol. Eco. 68, 2285–2295. doi: 10.1016/j.ecolecon.2009.02.016.
- [18] Kaplan, R.S. and Norton, D.P. (1996), The Balanced Scorecard: Translating Strategy into Action, First ed., Harvard Business School Press, Boston.
- [19] Kaplan, R.S. and Norton, D.P. (1996), The Balanced Scorecard: Translating Strategy into Action, First ed.,

- Harvard Business School Press, Boston.
- [20] Khan, M. A. S., Ali, M., Usman, M., Saleem, S., and Jianguo, D. (2019). Interrelationships between ethical leadership, green psychological climate, and organizational environmental citizenship behavior: the moderating role of gender. Front. Psychol. 10:1977. doi: 10.3389/fpsyg.2019.01977.
- [21] Khan, M. A. S., Ali, M., Usman, M., Saleem, S., and Jianguo, D. (2019). Interrelationships between ethical leadership, green psychological climate, and organizational environmental citizenship behavior: the moderating role of gender. Front. Psychol. 10:1977. doi: 10.3389/fpsyg.2019.01977.
- [22] Khan, S. A. R., and Qianli, D. (2017). Impact of green supply/ chain management practices on firms' performance: an empirical study from the perspective of Pakistan. Environ. Sci. Pollu. Res. 24, 16829– 16844. doi: 10.1007/s11356-017-9172-5.
- [23] Khan, S. A. R., and Qianli, D. (2017). Impact of green supply/ chain management practices on firms' performance: an empirical study from the perspective of Pakistan. Environ. Sci. Pollu. Res. 24, 16829– 16844. doi: 10.1007/s11356-017-9172-5.
- [24] Krajnc, D. and Glavic, P. (2005), "A model for integrated assessment of sustainable development", Resources, Conservation and Recycling, Vol. 43, pp. 189-208.
- [25] Lamm, E., Tosti-Kharas, J., King, C.E. 2015. Empowering employee sustainability: Perceived organizational support toward the environment. J. Bus. Ethics. 128, 207-220.
- [26] Lee, J. W., Kim, Y. M., and Kim, Y. E. (2018). Antecedents of adopting corporate environmental responsibility and green practices. J. Bus. Ethics 148, 397–409. doi: 10.1007/s10551-016-3024-y.
- [27] Lee, K.H. and Saen, R.F. (2011), "Measuring corporate sustainability management: a data envelopment analysis approach", International Journal of Production Economics, Vol. 140 No. 1, pp. 219-226.
- [28] Li, W., Bhutto, T. A., Xuhui, W., Maitlo, Q., Zafar, A. U., and Bhutto, N. A. (2020). Unlocking employees' green creativity: the effects of green transformational leadership, green intrinsic, and extrinsic motivation. J. Clean. Prod. 255, 120229. doi: 10.1016/j.jclepro.2020.120229
- [29] Lin, C.-Y., and Ho, Y.-H. (2008). An empirical study on logistics service providers' intention to adopt green innovations. J. Technol. Manage. Innov. 3, 17–26.
- [30] Mittal, S., and Dhar, R. L. (2015). Transformational

- leadership and employee creativity: mediating role of creative self-efficacy and moderating role of knowledge sharing. Manag. Decis. 53, 894–910. doi: 10.1108/MD-07-2014-0464.
- [31] Mittal, S., and Dhar, R. L. (2016). Effect of green transformational leadership on green creativity: a study of tourist hotels. Tour. Manag. 57, 118–127. doi: 10.1016/j.tourman.2016.05.007
- [32] Möller, A. and Schaltegger, S. (2005), "The sustainability balanced scorecard as a framework for eco-efficiency analysis", Journal of Industrial Ecology, Vol. 9 No. 4, pp. 73-83.
- [33] Morin, E.M. (1995), "Organizational effectiveness and the meaning of work", in Pauchant, T.C. et al. (Ed.), Search of Meaning. Managing for the Health of Our Organizatons, Our Communities, and the Natural World, Jossey-Bass, San Francisco, pp. 29-64.
- [34] Paillé, P., Boiral, O., Chen, Y. 2013. Linking environmental management practices and organizational citizenship behaviour for the environment: a social exchange perspective. Int. J. Hum Resour. Manag, 24, 3552-3575.
- [35] Rennings, K. (2000). Redefining innovation—ecoinnovation research and the contribution from ecological economics. Ecol. Eco. 32, 319–332. doi: 10.1016/s0921-8009(99)00112-3.
- [36] Saeed, A., Jun, Y., Nubuor, S., Priyankara, H., and Jayasuriya, M. (2018). Institutional pressures, green supply chain management practices on environmental and economic performance: a two theory view. Sustainability 10, 1517. doi: 10.3390/su10051517.
- [37] Shahzad, F., Du, J., Khan, I., Shahbaz, M., Murad, M., and Khan, M. S. S. (2020). Untangling the influence of organizational compatibility on green supply chain management efforts to boost organizational performance through information technology capabilities. J. Cleaner Prod. 266, 1–13.
- [38] Singh, S. K., Del Giudice, M., Chierici, R., and Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. Tech. Forecast. Soc. Change 150, 119762. doi: 10.1016/j.techfore.2019.119762.
- [39] Song, W., and Yu, H. (2018). Green innovation strategy and green innovation: The roles of green creativity and green organizational identity. Corporate Social Responsibility Environ.Manage. 25, 135–150. doi: 10.1002/csr.1445.
- [40] Sun, X., El Askary, A., Meo, M. S., Zafar, N. U. A., and Hussain, B. (2022). Green transformational

- leadership and environmental performance in small and medium enterprises. Econ. Res. 1, 1–19. doi: 10.1080/1331677X.2021.2025127.
- [41] Tang, M., Walsh, G., Lerner, D., Fitza, M. A., and Li, Q. (2018). Green innovation, managerial concern and firm performance: An empirical study. Bus. Strategy Environ. 27, 39–51. doi: 10.1002/bse.1981.
- [42] Tuan, L. T. (2019). Environmentally-specific servant leadership and green creativity among tourism employees: dual mediation paths. J. Sustain. Tour. 28, 86–109. doi: 10.1080/09669582.2019.1675674.
- [43] Xie, X., Huo, J., and Zou, H. (2019). Green process innovation, green product innovation, and corporate financial performance: a content analysis method. J. Bus. Res. 101, 697–706. doi: 10.1016/j.jbusres.2019.01.010.