Additionally, as proposed by Henseler et al. (2015), discriminant validity was also verified via the heterotrait - monotrait ratio (HTMT). Each HTMT ratio, as listed in Table 3, was less than the most restraining threshold of 0.85. This demonstrates a healthy discriminant validity property.

Table 3. HTMT Results

Variables	**Ec.P**	**EP**	**GH**	**GPC**	**GTI**	**OP**	**SP**
Ec.P							
EP	0.729						
GH	0.504	0.449					
GPC	0.586	0.542	0.790				
GTI	0.645	0.574	0.806	0.798			
OP	0.677	0.736	0.476	0.583	0.609		
SP	0.733	0.840	0.375	0.615	0.583	0.772	

In addition, a formative construct was created for GHRM bundle practices following from the most recent recommendation in the field (Longoni et al., 2016). With the purpose of assessing the collinearity issues, similar criterion needs to be adhered to when evaluating formative measurement models such as tolerance and VIF values. In detail, issues with collinearity could be indicated by a VIF value of 5 or higher (Hair et al., 2017), or instances of VIF valuing 3.3 or higher. The result lateral collinearity test is presented in Table 4. The independent variables which are GHRM bundle, external GSCM, and internal GSCM inner VIF variables to be tested for lateral multicollinearity are less than 5, indicating that multicollinearity is not potentially problematic for this research model. Figure 1 illustrates the final reliable and valid measurement model by using Smart-PLS Version 3.2.7.

Table 4. Formative construct assessment.

Formative construct	Reflective factors	Item weight	t-value	VIF
GHRM bundle	GH	0.264	8.093	1.718
	GTI	0.440	12.278	1.946
	GPC	0.530	14.471	2.885

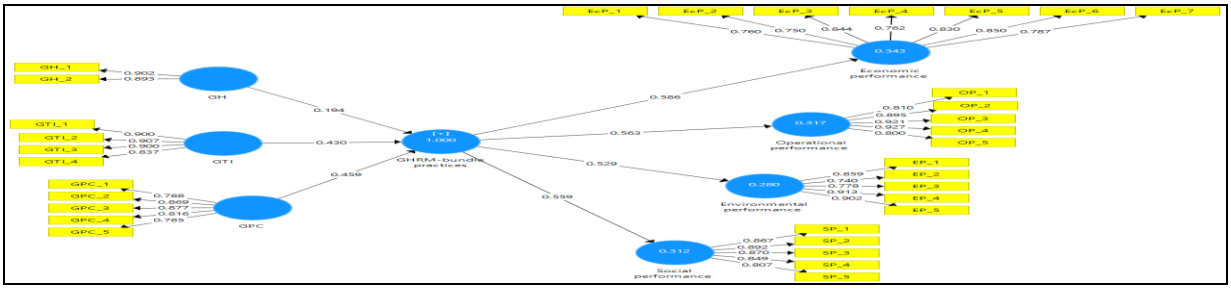

Figure 1. Measurement assessment model results

4.2 Structural model results

Having examined the measurement model's reliability and validity, the next step is to evaluate the structural model. In doing so, six different tests were performed to evaluate the inner model as suggested by Ramayah et al. (2018) and Hair et al. (2017). Those different tests are predictive relevance (Q^2), coefficient of determination (R^2), effect size (f^2), and finally path coefficient. Firstly, the structural model utilizing the bootstrap procedure was conducted, using 5000 rounds of resampling and the scale and the importance of the structural paths were found to be consistent. Secondly, Stone–Geisser's Q^2 test (Hair et al. 2017) was administered to check for the predictive relevance of the

model, since all cross-validity redundancies of the endogenous latent variables were above zero as shown in Table 5, this supports the claim that this study model has an adequate ability to predict. Thirdly, the quality of the structural model depends on the values of R^2, which demonstrate the ability of the exogenous variables in explaining the endogenous variables. Thus, based on the results of this study, all values of R^2 have fulfilled Chin's (1998) criteria (see Table 5). After evaluating the R^2, determining the change in R^2 by assessing the f^2 to see whether the effect of a particular exogenous variable on an endogenous variable a substantial effect has is important (Ramayah et al., 2018). Moreover, it is worth mentioning that this study does not examine the Goodness of Fit (GoF), GoF cannot be applied to formatively measured models and does not castigate parameterization attempts (Ramayah et al., 2018). The decision to use GoF is still at its infancy and is not an obligation to be applied in PLS-SEM situation.

Table 5. Q^2, R^2, and f^2 results

Variables	R^2 adj	Q^2	f^2 (EP)	f^2 (Ec.P)	f^2 (OP)	f^2 (SP)
GHRM bundle	----------	0.584	0.522	0.484	0.464	0.454
EP	0.272	0.179	-----	----	-------	--------
Ec.P	0.335	0.194	-------	--------	-------	
OP	0.309	0.218	------	------	---------	
SP	0.304	0.201	------	------	------	

Overall, the results for adjusted variance referring to the EP, Ec.P, OP, and SP (R^2 adjusted) were 0.272, 0.335, 0.309, and 0.304, respectively. Finally, the firm's size and ISO 14001 certification were taken as control variables. Returning to the sets of hypotheses presented above, Table 6 showed that the association between GHRM bundle practices and Ec.P was established via H1a: ($\beta = 0.586$, $t = 7.205$, $p< 0.000$). Similarly, H1b predicted that GHRM bundle practices will positively affect OP. The study's result corroborated this relationship ($\beta = 0.563$, $t = 7.552$, $p< 0.000$). H1c revealed that GHRM bundle practices were positively associated with EP by ($\beta = 0.529$, $t = 6.128$, $p< 0.000$). Finally, H1d anticipated a positive relationship between GHRM bundle practices and SP. The study results emphasized the proposed relationship; thus, the hypothesis was established ($\beta = 0.559$, $t = 7.816$, $p< 0.000$). It can, therefore, be concluded that all hypotheses were found to be significant.

Table 6. Structural model results.

Path	(β)	Standard. Error	t- value	p-value	Results
GHRM bundle → EP	0.529	0.086	6.128	0.000	Supported
GHRM bundle → Ec.P	0.586	0.081	7.205	0.000	Supported
GHRM bundle → OP	0.563	0.075	7.552	0.000	Supported
GHRM bundle → SP	0.559	0.071	7.816	0.000	Supported

5. Discussion of the main findings

The findings from the current study showed significant relations amongst GHRM bundle practices, EP, Ec.P, SP, and OP respectively. The statistical outputs indicated that GHRM bundle practices did, indeed, lead to enhance four dimensions of organizational performance (i.e., EP, Ec.P, SP, and OP). This finding is confirmed by Renwick et al. (2013) who argued for manufacturing organizations in developing countries proactively adopting the green element in their HRM practices. Paillé et al. (2014) demonstrated that implementation of GHRM can improve a firm's EP among Chinese manufacturing organizations, especially in terms of their focus on adapting human resource activities to incorporate their environmental strategies. It has also been observed that human resource managers can improve environmental culture by establishing a workforce that is interested in environmental issues, and involve their employees in such practices; thereby improve organization EP (Mousa and Othman, 2020). The vital role of

GHRM in promoting environmental awareness and sustainability within a company and the positive impact on a firm's EP was suggested by Jabbour (2011). Anusingh and Shikha (2015) argued that GHRM practices such as green training, employee involvement, and green rewards also have a positive effect on EP's among Indian manufacturing firms. It has also been suggested that the deployments of ecological ideologies and values through GHRM practices may incubate the EP based motivation and skills of the workforces (Longoni et al., 2016), creating opportunities for the workforces to contribute in the ecological sustainability of the organization (Zaid et al., 2018a). Assurances of GHRM practices via green training and recognition of green efforts by employees will lead to skills establishment and allow them the chances for green initiative involvement (Shen et al., 2018). Such benefits inevitably improve their psychological availability and career satisfaction (Chaudhary, 2019), thereby upgrading their organisational EP. Besides, implementing optimal green hiring practices are crucial for organizations as environmentally-cognisant bosses are attractive features for potential employees looking to contribute to environmentally-responsible initiatives. This will inevitably become prized contribution towards organisational environmental objectives and improved sustainability EP (Zaid et al., 2018a).

In terms of Ec.P, a positive nexus was established between the GHRM bundle and Ec.P. This result supports suggestions from prior literature that underlined GHRM's vital role in improving an organization's EP and Ec.P concurrently (Renwick et al., 2013). The higher the likelihood for positive financial outcomes to accumulate in organizations results in increased employee capacity and drive. This allows them the contributory opportunities towards attaining the organisational vision for environmental sustainability. Subsequently, organizations will find it more receptive for maximizing their profits and allocating more cost-management chances that only driven environmental management is capable of providing (O'Donohue and Torugsa, 2016). In the long-term, the economic benefits of GHRM practices tend to outweigh the associated financial costs largely because the economic value is added by having an inspired and dedicated green workforce (Weber, 2008). Rani and Mishra (2014) concluded that many benefits were accrued by organizations when adopting GHRM practices such as costs reduction, better employee involvement, and operating in an environmentally sustainable fashion. Pandey et al. (2016) emphasized that firms which implement environmental practices are able to enjoy better sales and costs reductions through obtaining a greater volume of sales. Although it is true that many green practices need high investment, large companies may save costs by utilizing recyclable products and energy efficient lighting, and by minimizing the use of paper for printing (Pandey et al., 2016). Many studies also argued that the greening of a company has a beneficial impact on its community image (e.g. Rezaei-Moghaddam, 2016; Wagner, 2013). In addition, Chiappetta et al. (2017) stated that GHRM was likely to positively affect a company's EP, as well as the overall welfare of staff. Wolf (2014) found that the adoption of sustainable green practices among German manufacturing organizations positively affected these organizations' SP, where staff integration was allowed to affect the process. In summary, these results strongly suggest that GHRM bundle practices have significant potential to enhance a firm's performance through sustainable means. It could be said that Palestinian manufacturing firms are in a "win-win" relationship if they actively seek opportunities to implement GHRM bundle practices and will lead them to a positive EP, Ec.P, SP, and OP.

References

Aggarwal, S. and Sharma, B. (2015) 'Green hrm: Need of the hour. *International Journal of Management and Social Science Research Review'*, Vol. No.18, pp. 63-70.

Al-Sheyadi, A., Muyldermans, L. and Kauppi, K. (2019) 'The complementarity of green supply chain management practices and the impact on environmental performance', *Journal of environmental management*, Vol. 242, pp 186-198.

Ann, G., Zailani, S. and Abd Wahid, N. (2006) 'A study on the impact of environmental management system (EMS) certification towards firms' performance in Malaysia', *Management of Environmental Quality: An International Journal*, Vol. 17 No. 1, pp 73-93.

Anusingh, L. and Shikha, G. (2015) 'Impact of green human resource factors on environmental performance in manufacturing companies: an empirical evidence', *International Journal of Engineering and Management Sciences*, Vol. 6 No.1, pp 23-30.

Bangwal, D. and Tiwari, P. (2015) 'Green HRM–A way to greening the environment', *Journal Business Management*, Vol. 17, pp 45-53.

Chaudhary, R. (2019) 'Green human resource management in Indian automobile industry', *Journal of Global Responsibility*, Vol. 10 No. 2, pp 161-175.

Chiappetta, C. J. and Jabbour, A. B. L. d. S. (2019) '7 Fundamentals of human resource management for environmentally sustainable supply chains', In Sarkis (Eds.), *Handbook on the Sustainable Supply Chain*, Edward Elgar Publishing Limited, UK, pp. 105-118

Chiappetta Jabbour, C. J., Mauricio, A. L. and Jabbour, A. B. L. d. S. (2017) 'Critical success factors and green supply chain management proactivity: shedding light on the human aspects of this relationship based on cases from the Brazilian industry', *Production Planning & Control,* Vol. 28 No. 8, pp 671-683.

Chin, W. W. (1998) 'The partial least squares approach to structural equation modeling', *Modern methods for business research*, Vol. 295 No. 2, pp 295-336.

EQA. (2018). *Environment sector strategy: executive summary*. [online] Technical report. http://environment.pna.ps/ar/index.php?p=reports (Accessed 10 June 2018).

Fornell, C. and Larcker, D. F. (1981) 'Evaluating structural equation models with unobservable variables and measurement error', *Journal of marketing research*, pp 39-50.

Guerci, M., Longoni, A. and Luzzini, D. (2016), 'Translating stakeholder pressures into environmental performance–the mediating role of green HRM practices', *The International Journal of Human Resource Management,* Vol. 27 No. 2, pp 262-289.

Haddock-Millar, J., Sanyal, C. and Müller-Camen, M. (2016) 'Green human resource management: a comparative qualitative case study of a United States multinational corporation', *The International Journal of Human Resource Management,* Vol. 27 No. 2, pp 192-211.

Hair Jr, J. F., Sarstedt, M., Ringle, C. M. and Gudergan, S. P. (2017) *Advanced Issues in Partial Least Squares Structural Equation Modeling*, SAGE Publications, USA.

Henseler, J., Ringle, C. M. and Sarstedt, M. (2015) 'A new criterion for assessing discriminant validity in variance-based structural equation modeling', *Journal of the academy of marketing science,* Vol. 43 No. 1, pp 115-135.

Jabbour, C. (2011) 'How green are HRM practices, organizational culture, learning and teamwork? A Brazilian study', *Industrial and Commercial Training*, Vol. 43 No. 2, pp 98-105.

Jabbour, C. J. C., de Sousa Jabbour, A. B. L., Govindan, K., Teixeira, A. A. and de Souza Freitas, W. R. (2013) 'Environmental management and operational performance in automotive companies in Brazil: the role of human resource management and lean manufacturing', *Journal of Cleaner Production,* Vol. No. 47, pp 129-140.

Jabbour, C. J. C. (2015) 'Environmental training and environmental management maturity of Brazilian companies with ISO14001: empirical evidence', *Journal of Cleaner Production*, Vol. 96, pp 331-338.

Jabbour, C. J. C., Sarkis, J., de Sousa Jabbour, A. B. L., Renwick, D. W. S., Singh, S. K., Grebinevych, O. and Godinho Filho, M. (2019) 'Who is in charge? A review and a research agenda on the 'human side'of the circular economy', *Journal of Cleaner Production,* Vol. 222, pp 793-801.

Jadhav, J. R. and Mantha, S. S. (2013) 'Practice Bundles for Integrated Green-Lean Manufacturing Systems', *International Journal of Computer Applications,* Vol. 7, pp 975–8887.

Khurshid, R. and Darzi, M. A. (2016) 'Go green with green human resource management practices', *Clear International Journal of Research in Commerce & Management,* Vol. 7 No. 1.

Longoni, A., Luzzini, D. and Guerci, M. (2016) 'Deploying Environmental Management Across Functions: The Relationship Between Green Human Resource Management and Green Supply Chain Management', *Journal of Business Ethics*, Vol. 151 No. 4, pp 1-15.

Malik, A., Pereira, V. and Tarba, S. (2019) 'The role of HRM practices in product development: Contextual ambidexterity in a US MNC's subsidiary in India', *The International Journal of Human Resource Management*, Vol. 30 No. 4, pp 536-564.

Marconi, N., de Borja Reis, C. F. and de Araújo, E. C. (2016) 'Manufacturing and economic development: The actuality of Kaldor's first and second laws', *Structural Change and Economic Dynamics,* Vol. 37, pp 75-89.

Margaretha, M. and Saragih, S. (2013) 'Developing new corporate culture through green human resource practice'. Paper Presented at the *International Conference on Business, Economics, and Accounting*. 20 – 23 March 2013. Bangkok, Thailand.

Masri, H. A. and Jaaron, A. A. (2017) 'Assessing green human resources management practices in Palestinian manufacturing context: An empirical study', *Journal of Cleaner Production,* Vol. 143, pp 474-489.

Mehta, K. and Chugan, P. K. (2015) 'Green HRM in pursuit of environmentally sustainable business', *Journal of Industrial and Business Management,* Vol. 3 No. 3, pp 74-81.

Miroshnychenko, I., Barontini, R. and Testa, F. (2017) 'Green practices and financial performance: A global outlook', *Journal of Cleaner Production,* Vol. 147, pp 340-351.

Mousa, S. K., & Othman, M. (2020) 'The impact of green human resource management practices on sustainable performance in healthcare organisations: A conceptual framework', *Journal of Cleaner Production*, 243, 118595.

Naveh, E. and Marcus, A. A. (2004) 'When does the ISO 9000 quality assurance standard lead to performance improvement? Assimilation and going beyond', *IEEE transactions on Engineering Management*, Vol. 51 No. 3, pp 352-363.

Newman, A., Miao, Q., Hofman, P. S. and Zhu, C. J. (2016) 'The impact of socially responsible human resource management on employees' organizational citizenship behaviour: the mediating role of organizational identification', *The international journal of human resource management*, Vol. 27 No. 4, pp 440-455.

O'Donohue, W. and Torugsa, N. (2016) 'The moderating effect of 'Green'HRM on the association between proactive environmental management and financial performance in small firms', *The International Journal of Human Resource Management*, Vol. 27 No. 2, pp 239-261.

Paillé, P., Chen, Y., Boiral, O. and Jin, J. (2014) 'The impact of human resource management on environmental performance: An employee-level study', *Journal of Business Ethics*, Vol. 121 No. 3, pp 451-466.

Pandey, S., Viswanathan, V. and Kamboj, P. (2016) 'Sustainable green HRM–importance and factors affecting successful implementation in organizations', *International Journal of Research in Management and Business*, Vol. 2 No. 3, pp 11-29.

Peng, D. X. and Lai, F. (2012) 'Using partial least squares in operations management research: A practical guideline and summary of past research', *Journal of Operations Management*, Vol. 30 No. 6, pp 467-480.

Podgorodnichenko, N., Edgar, F. and McAndrew, I. (2019) 'The role of HRM in developing sustainable organizations: Contemporary challenges and contradictions', *Human Resource Management Review*.

Ramayah, T., Cheah, J., Chuah, F., Ting, H. and Memon, M. A. (2018) *Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 3.0: An Updated and Practical Guide to Statistical Analysis*, Pearson, Malaysia.

Rani, S. and Mishra, K. (2014) 'Green HRM: Practices and strategic implementation in the organizations', *International Journal on Recent and Innovation Trends in Computing and Communication*, Vol. 2 No. 11, pp 3633-3639.

Rehman, M. A., Seth, D. and Shrivastava, R. (2016) 'Impact of green manufacturing practices on organizational performance in Indian context: An empirical study', *Journal of Cleaner Production*, Vol. 137, pp 427-448.

Ren, S., Tang, G. and Jackson, S. E. (2018) 'Green human resource management research in emergence: A review and future directions', *Asia Pacific Journal of Management*, Vol. 35 No. 3, pp 769-803.

Renwick, D. W., Redman, T. and Maguire, S. (2013), "Green human resource management: A review and research agenda", *International Journal of Management Reviews*, Vol. 15 No. 1, pp 1-14.

Rezaei-Moghaddam, K. (2016) 'Green Management of Human Resources in Organizations: An Approach to the Sustainable Environmental Management', *Journal of Agricultural Technology*, Vol. 12 No. 3, pp 509-522.

Russo, M. V. and Fouts, P. A. (1997) 'A resource-based perspective on corporate environmental performance and profitability', *Academy of Management Journal*, Vol. 40 No. 3, pp 534-559.

Sharma, S., and Gupta, N. (2015) 'Green HRM: an innovative approach to environmental sustainability'. Paper Presented at the *Twelfth AIMS International Conference on Management*. 2–5 January. Calicut, India.

Shen, J., Dumont, J., and Deng, X. (2018) 'Employees' perceptions of green HRM and non-green employee work outcomes: The social identity and stakeholder perspectives', *Group & Organization Management*, Vol. 43 No. 4, pp 594-622.

Solovida, G. T., Solovida, G. T., Latan, H. and Latan, H. (2017) 'Linking environmental strategy to environmental performance: Mediation role of environmental management accounting', *Sustainability Accounting, Management and Policy Journal*, Vol. 8 No. 5, pp 595-619.

Tadić, I. and Pivac, S. (2014) 'Defining Human Resource" Bundles" and Its' Correlation with Companies' Financial Performances', *International Journal of Social, Management, Economics and Business Engineering*, Vol. 8 No. 4, pp 1025-1029.

Tang, G., Chen, Y., Jiang, Y., Paillé, P. and Jia, J. (2018) 'Green human resource management practices: scale development and validity', *Asia Pacific Journal of Human Resources*, Vol. 56 No. 1, pp 31-55.

Teixeira, A. A., Jabbour, C. J. C., de Sousa Jabbour, A. B. L., Latan, H. and de Oliveira, J. H. C. (2016) 'Green training and green supply chain management: evidence from Brazilian firms', *Journal of Cleaner Production*, Vol. 116, pp 170-176.

Wagner, M. (2011) 'Environmental management activities and sustainable HRM in German manufacturing firms–incidence, determinants, and outcomes', *German Journal of Human Resource Management*, Vol. 25 No. 2, pp 157-177.

Wagner, M. (2013) 'Green'human resource benefits: do they matter as determinants of environmental management system implementation?', *Journal of Business Ethics,* Vol. 114 No. 3, pp 443-456.

Weber, M. (2008) 'The business case for corporate social responsibility: A company-level measurement approach for CSR', *European Management Journal,* Vol. 26 No. 4, pp 247-261.

Wolf, J. (2014) 'The relationship between sustainable supply chain management, stakeholder pressure and corporate sustainability performance', *Journal of Business Ethics,* Vol. 119 No. 3, pp 317-328.

Wood, G. (2014). *Human resource management and the institutional perspective*. Routledge.

Younis, H., Younis, H., Sundarakani, B., Sundarakani, B., Vel, P. and Vel, P. (2016) 'The impact of implementing green supply chain management practices on corporate performance', *Competitiveness Review,* Vol. 26 No. 3, pp 216-245.

Zaid, A. A., Jaaron, A. A. and Bon, A. T. (2018a) 'The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study', *Journal of Cleaner Production*, Vol. 204, pp 965-979.

Zaid, A. A., Jaaron, A. A. M. and Bon, A. T. (2018b) 'Green Human Resource Management Bundle Practices and Manufacturing Organizations for Performance Optimization: a Conceptual Model', *The International Journal of Human Resource Management*, Vol. 7 No. 3, pp 87-91.

Zhu, Q., Sarkis, J. and Lai, K. H. (2012) 'Examining the effects of green supply chain management practices and their mediations on performance improvements', *International journal of production research*, Vol. 50 No. 5, pp 1377-1394.

Zhu, Q., Sarkis, J. and Lai, K. (2013) 'Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices', *Journal of Purchasing and Supply Management*, Vol. 19 No. 2, pp 106-117.

Acknowledgements

A special thanks for Palestine Technical University (PTUK)–Kadoorei for supporting this research.

Biographies

Ahmed A. Zaid is assistant professor at the Industrial Management Department of Palestinian Technical University (PTUK). He received his PhD degree in Operations and Supply Chain Management from the Universiti Tun Hussein Onn Malaysia in 2019 and MS in Industrial System Engineering from King Fahd University of Petroleum & Minerals (KFUPM), Dhahran - Saudi Arabia. Due to his excellent academic performance and participation in extracurricular activities, he received several awards including "Gold Medal for Best Publication Award Category 2019" and "Silver Medal for graduation on Time 2019" at Universiti Tun Hussein onn Malaysia. His research activities have focused on human resource management, service quality, logistics and supply chain management, quantitative method, and PLS-SEM.

Abdul Talib Bon is a professor of Production and Operations Management in the Faculty of Technology Management and Business at the Universiti Tun Hussein Onn Malaysia since 1999. He has a PhD in Computer Science, which he obtained from the Universite de La Rochelle, France in the year 2008. His doctoral thesis was on topic Process Quality Improvement on Beltline Moulding Manufacturing. He studied Business Administration in the Universiti Kebangsaan Malaysia for which he was awarded the MBA in the year 1998. He's bachelor degree and diploma in Mechanical Engineering which his obtained from the Universiti Teknologi Malaysia. He received his postgraduate certificate in Mechatronics and Robotics from Carlisle, United Kingdom in 1997. He had published more 150 International Proceedings and International Journals and 8 books. He is a member of MSORSM, IIF, IEOM, IIE, INFORMS, TAM and MIM.

Ayham Jaaron is currently a Senior Lecturer in Business and management at the Department of Management and Entrepreneurship of De Montfort University, Leicester. Before this, he was an Associate Professor at the Industrial Engineering Department of An-Najah national University in Palestine 2010-2019. During this time, Ayham served as Head of Industrial Engineering Department for three consecutive years 2011-2014. He led the largest ABET Accreditation project in the region for nine engineering programs simultaneously at An-Najah National University, that resulted in a successful ABET Accreditation process. His research activities have recently focused on strategic management, sustainable manufacturing and Industry 4.0, service quality, resource utilization, organizational resilience, and green human resources management in the manufacturing and service sectors.