The Impact of Green Human Resource Management Towards Integrating Green Reverse Logistics Practices in the Manufacturing Sector in South Asia

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Abstract: One of the main challenges the business world to be disturbed by is Environmental Sustainability. Out of all Green human resource management aids in developing new procedures and policies to enhance the environmental performance in the manufacturing sector in South Asia. Green reverse logistics practices are also dominating within the industry due to legislations of the government, consumer pressure and competitiveness. Green reverse logistics is about taking back the used product via the consumer with the intentions of remanufacture, repair, reutilization, recycle and disposal. However, it was observed that among the literature there was no discussion of the vital elements of green human resource management and green reverse logistics and the collaboration of those would impact the manufacturing sector of South Asia. In bridging the gap between green human resource management and green reverse logistics, the authors have adopted systematic literature review and with the carefully selected journals were used in identifying the themes and was finalized with thematic analysis. The qualitative method was carried out as per the results the green human resource management was further deduced to green training, green recruitment, green performance evaluation and green rewards and recognition. Many of these themes were positively correlated and would be able to provide benefits to the manufacturing industry through environmental performance in the long run and short run. The paper further provides the insightful implications to be carried out in the manufacturing industry in the South Asian region.

Keywords: Environmental sustainability, green human resources management, green reverse logistics, sustainable environmental performances.

Introduction

Environmental degradation, climate changes and increased global warming has opened the eyes of global citizens to enhance the organization's sustainability. Today, the business world is all about green strategies which aid in creating long term value within the consumers as well as the employees and other internal and external stakeholders (Saeed et al., 2021). Among these green initiatives, the key practices of Green Human Resource Management (GHRM) play a vital role in achieving the green objectives of the organizations (Hameed et al., 2020). Consequently, GHRM is a predominant factor in encouraging the employees in following the green initiatives which are aligned within the corporate strategy and the visions of the organization (Roscoe et al., 2019). The literature recommended that GHRM is a set of policies adopted by organizations in reaching environmental sustainability (Hameed et al., 2020). The revolutionary concept of GHRM is accompanied to improve the HRM structure, culture, organisational policies, and

strategies in achieving the overall objective of protecting the environment. However, it is not the sole responsibility of the employees or the HR department to adopt the green initiatives, yet all the units of the organizations have equal responsibility in preserving the ecological image of the organization.

Another solution to the significant pollution of the environment around the world is to achieve or establish sustainable logistics along with sustainable packaging, distribution, transport, procurement, and sustainable reverse logistics (Richnak & Gubova, 2021). It is evident that logistics components are interdependent, and many compromises are needed in every aspect of sustainability (Mugoni, Kanyepe and Tukuta, 2024). Reverse Logistics (RL) primarily focuses on taking back the products from the consumer point back to the origin or the manufacturer with the purpose of regaining value to the product under the elements of recycling, remanufacturing, reusing, repairing, and refurbishing. The term

"Green" incorporates when the process is driving under environmentally friendly approaches. The fundamental of the reverse logistics is born by the issues arising due to environmental deterioration (Grant, Trautrims and Chee Yew Wong, 2015). In ensuring environmentally sustainable approaches, the organizations are needed to follow sustainable management performances too. Thus, the sustainability transitions apply at the stages of institutional, technological, political, and economical. In covering these transitions HRM plays a vital role. When the organization is well confident in managing the RL programs, would result in many positive outcomes (Dincel, 2023).

Logistics being a labor-intensive process has a direct link to HRM and further HRM being a key component in the supply chain yet important in the logistics component (Jabbour and de Sousa Jabbour, 2016) . Green reverse logistic (GRL) is a proactive and an advanced approach in achieving sustainability goals, yet the right attitudes and skills along with accurate training is essential to accomplish these goals. Thus, managing, training, allocation of resources, innovative capabilities and with the right attitude, behaviors and skills are much needed elements in driving towards sustainability. GRL refers management of reverse logistic processes such as reuse, repair, remanufacture, recycling and disposal aiming the minimizing of environmental impact under the areas of energy consumption, materials waste, water consumption, water pollution, air pollution and soli pollutions.

Most of the organizations are presently promoting these two emerging components of GHRM and GRL in various business contexts However, very little research has paid attention to the relationship between how effective GHRM is in integrating GRL into the organization. Thus, the research is hoping to bridge the gap between the emerging fields.

In accordance with the above requisites, the principal objective of this study has been to synthesize the relationship between green human resource management practices and green reverse logistic practices while exploring the possibility of effective integration of both.

The rest of this paper is organized as follows: Firstly, explaining the data collection and analysis methods; secondly, discussing the key findings of selected research done so far and proposing an effective solution to integrate both practices.

Methodology

The whole study is based on the systematic review approach where the author has analyzed the existing literature in order identify and review the relevancy among the themes. In order to continue with the SR approach, the author analyzed the journal articles through a rigorous approach known to be the PRISMA model. With the elaboration of the search criteria, evaluation of the quality, inclusion and exclusion, descriptive summary and the effectiveness of the thematic analysis has moved forward within the study.

The approach of the research is deductive where the themes were developed within the based theories which are already in existence and after been tested using the strategy of the research (Dudovskiy, 2018). Furthermore, since the author is able to prove the conclusions against the theories in existence and validation, the

deductive approach has been effective. The existing theory has been evaluated among the literature review and has derived the objectives with the specific variables. As per the Saunders, Lewis & Thornhill (2009), the variables would be evaluated under the thematic analysis providing the importance to the deductive approach, and critically evaluate the key findings within the data collected.

The highest quality journal articles were selected under every theme, within the well reputed database as Emerald, Research Gate, Google Scholar. There were 496 papers filtered and a final 28 papers were selected with the relevancy to the topic or the scope, repetition and irrelevant research objectives and goals. Firstly, the author filtered most of the articles depending on the key words and the main title of the paper, secondly the author analyzed the articles through the abstract and removed the articles which are not based on the current study. Finally, after reading the full article the author removed some more which include details that are not relevant to the study. Finally, the author was able to consider the best quality journal articles and were used for the final analysis.

Further in this study, the author would critically argue the patterns that have been derived among the GHRM and GRL. The key words used were, Green HRM practices, Reverse Logistics Practices, Environmental performances, organisational sustainability, Sustainable logistics, green supply chain management, Integrated approach of GHRM practices and Green Reverse logistics and Strategies to generate GHRM and GRL. In reasoning the use of the large number of key words are to derive the best quality articles in the context of GHRM and GRL. Thus, the author has fully filled the systematic methodology under two aspects where the citation analysis was used in order to evaluate the famous articles and also to understand the prominence within the subject matter. The author also uses thematic analysis (TA). This is a generic approach in analyzing qualitative data. In the view of TA is known to be the "foundation method for qualitative analysis" (Braun and Clarke, 2006). It aids in understanding the themes and the patterns under each objective within the data set. The TA also enables in further analyzing the patterns or themes in accordance with the current research questions (Saunders and Lewis Thornhill, 2016).

Discussion

The study sets out to investigate how effective the GHRM in the organization could impact towards the integration of GRL practices in the manufacturing industry in the South Asian market. The study identifies how each element of the GHRM would impact towards the GRL elements. The outcome of the current study is reflected in the theoretical framework and a flow of strategies that could be implemented in the manufacturing industries in the South Asian region.

In considering the thematic analysis along with the literature evidence it was understood that HRM has a significant capacity in understanding the depth and the scope of greening the practices within the organization. In the view of Saeed et al., (2021) **green recruiting** plays a critical role with the HR department where it is the first step in screening the candidates who are having a greenery vision that is to be practices in the organization. If the company

employs candidates who are naturally conscious of the environmental practices, it would be easy to achieve the environmental objectives. However, as per the Ojo, Tan and Alias (2020), the process that the company use in hiring the right skillful employees is needed to be understood well. Communicating the strategic values along with the goals to their candidates at the time of recruitment would bring out the best attitudes and behaviors within those individuals. If not, the wrong perspectives would severely affect the performance of the firm. On the other hand, the author Mishra (2017), argues that the recruitment process should be aligned with green posture, where eco-friendly ways are used in the process as online tools or very much limited papers. According to the literature of Mishra (2017), it was understood that personality factors would be affected in recruiting the candidates. This could also be measured by how far the organization is capable of branding their own ecofriendly practices that's aids in recruiting the right candidates with the aim of saving the environment. One could argue that having the right procedures for recruiting the right candidates, who are aware of the sustainable practices while retaining new talents in conserving the environment would bring the best employees. As per the TA, some authors have mainly been interested in recruiting the candidates who are willing to save the world, however, it was the responsibility of the company itself to mind map the effective and attractive ways in recruiting. Even though the company is branded as ecofriendly every step should be mirrored with green practices (Ullah, 2017). As per the TA recruitment is the prominent element of the GHRM, however it was surprising that the resistance to change would be affecting the green recruitment, where it should come from the top management of the HR. From the manager's perspective to the candidate's perspective, it should be aligned with the environmental objectives of the company. It was further elaborated that in the recruitment process, the relationship among the values of the organization and the employees are enhanced where the organization should look into the candidates who are possessing the green qualities which could be included in the job description (Ababneh, 2021 : Arulrajah, Opatha and Nawaratne, 2015). The right green qualifications would serve the organization while enhancing the sustainable performance of the employees. In the view of the authors, it was believed that the green recruitment element is critical but should be handled with much awareness. This is the first and foremost step in bringing in the right values, cultures, attitudes, and behaviors to the company that would bring the best in serving the organization's vision, mission, and the strategic environmental objectives of the company. Preferences should be given to candidates who possess the right qualification and are willing to participate in green management practices.

The evidence from the thematic analysis suggests that the next most effective element in GHRM is **green training**. This element becomes very important once the candidate becomes part of the organization. Thus, it has now become the duty of the organization to develop and invest in the workforce (Zubair and Khan, 2019). In line with the green training, it is about providing knowledge and skills in terms of activities deriving from environmentally friendly, reducing waste and conserving energy. When the employees have a sustainable culture, it would reflect on the performances of the firms in the long term. Much of the literature of Ababneh (2021),

pays mere attention of green training, where the author emphasizes on the ways of training with sessions, establishing constructive learning processes, closing the environmental knowledge gaps, developing capabilities on green activities would bring the enthusiasm, positive energy and uplifting the skills that ends in enhancing the competitiveness in related to saving the environment (Arulrajah, Opatha and Nawaratne, 2015). There are large number of studies that describe the positivity GHRM would bring within the organization. When raising expertise knowledge and skills among the employees, it stimulates the employees to act even outside the organization. Be responsible even within the household premises as sorting the garbage, having the intention of purchasing biodegradable products, would invent a responsible citizen. However, Yong, Yusliza and Fawehinmi (2019), is much more concerned about the support that should be provided by the top management in facilitating these activities. Developing the organisational culture, teamwork, constructive practical activities would bring out the technical green managing practices implementation. Nevertheless, the author believes that if the organization is moving towards the common strategic goal of green behavior the support and the contribution from the top management in practicing these activities would bring the best towards the sustainable developments. Whilst Mishra (2017), identified green training as key element in having successful environmentally friendly approaches and would ultimately aids in implementing environmental management system (EMS) within the organization, that would lead to better performances in individual employees and sustainable practices in the company Ullah (2017), had taken a different approach by focusing mainly on the how smart the organization should be while implementing these strategies. The company cannot keep boasting about being ecofriendly but should be acting smart by using online course materials without using any printed materials.

The results obtained from the thematic analysis proved that **managing the green performances** of the employees is prominent in GHRM context. When the company has set the target, this is all about comparing the actuals against the targets and communicating the actual support they have contributing towards the green practices in a timely manner (Ojo and Raman, 2019). As per Ullah (2017), it was believed that when environmental management is combined with green performance management, it aids in improving the quality and the value of the employees. Thus, providing them with green targets, green goals and green responsibilities would lead in enhancing the financial, organizational, and sustainable performances in the organization (Pham, Hoang and Phan, 2019). On the other hand, in spite of the much positivity the performance management could bring out within the employees, there could be some drawback in auditing their performance. When the organization is measuring individual performances in contrast to the metrics, in the view of the environmental activities, some individuals could have personality issues in knowing the actual performances and how far they lack behind. The ability of every individual in understating their actual performances might be disturbing for their future performances (Zubair and Khan, 2019). Yet again if the managers are able to find the gaps, finding solutions, and setting realistic targets for the future would enhance the perceived values of every individual

while increasing the value of efforts too (Mishra, 2017). The academic literature on Arulrajah, Opatha and Nawaratne (2015), stated that establishing environmental audits, field audits, communicating the green schemes to all level of managers, setting the green targets, managing the performances and responsibilities and goals would bring highly competitive advancements within the industry. However, the author believes the actual performances of the employees depend on the quality of the training provided by the company. If there are loopholes in the training materials, there could be some drawback with the actuals. Therefore, the metrics should be practical and should be provided after giving a constructive training session to the employees.

It has been conclusively shown in the thematic analysis, **green rewards and recognition** in sustainability has been a prominent element in GHRM. This element would shape the employee's motivation. Yet the reward system should be aligned with the green initiatives. This could be done through monetary and non-monetary manner that would finally motivate the employees and would display more commitment in the future (Arulrajah, Opatha and Nawaratne, 2015). When the green reward system is in place, it enables in putting extra efforts that is needed in achieving the environmental goals of the organization. The performance management and reward system are interrelated. If the employee is able to manage the performances as per the matrix, it is rewarding the employees while motivating them to work hard in the future (Mishra, 2017). The literature on Ullah (2017), specifically emphasizes that rewarding is a powerful tool among the organisational strategy. When the employees are rewarded for the acquired green achievements and skills upon those green practices it boosts them in acting more in saving the environment (Pham, Hoang and Phan, 2019). While the existing literature foreground more towards the motivating factors, Yong, Yusliza and Fawehinmi (2019), clearly focuses on that adopting green practices is about continuous change. Therefore, resistance to change would affect adopting green rewards. Some employees would be motivated to work more and put more effort in achieving the desired targets. Yet on the other hand, the author believes there could be some employees who are resistant to change for green practices. Literature from several studies suggests that green rewarding could be done through monetary base as salary increments, cash, or bonuses whereas non- monetary base would be through special leaves, awards via CEOs to enhance publicity, gifts to the employees or the members in the family as of (Ojo, Tan and Alias, 2020 : Ullah, 2017). In contrast, Ojo, Tan and Alias (2020), stated that when negative approaches are considered counterproductive could be shown by the employees. Mainly if the linking of rewards comes under promotion too. Thus, the author believes the careful determination of the green rewards could bring high motivation among the employees that work towards sustainability.

This study sets out to evaluate how effective the elements in GHRM are towards the GRL elements in the manufacturing industry in South Asia. The existing literature in the TA found the elements are green recruitment, green training, managing green performances and green rewards. Light of evidence suggests that the most prominent elements are green recruitment, green rewards,

and green training. The author believes that green recruitment is the most effective element since that the door opening of the new candidate in employing in the organization where the right attitude, skills and knowledge towards environmental sustainability of those selected candidates would impact the rest of the performances of the industry. Authur views this as **green competence**.

Focusing on the GRL , most of the organizations are now moving a step forward in dealing with the returned products from the consumer due to several reasons. Significant increments in the competition in the global market, changes within the perceptions of the consumers, government legislation, pressure groups and financial performances have led the organizations to restructure the process of the supply chain. With these developments, reverse logistics activities have emerged within the context of the manufacturing industry. One could argue that RL is the "forgotten child of the supply chain" (Ravi and Shankar, 2015). In general, RL is known to be starting from the end customer, where the product is collected from the consumer and then the end of life (EOL) product goes through many stages including repair, recycle, reuse, remanufacture and finally disposal.

The literature presented in the thematic analysis clearly identified **repair** as a prominent element in the process of RL. Repairing is about replacing or fixing the broken parts in the products which have been sent by the customer (Agrawal, Singh and Murtaza, 2015 : Akdogan and Coskun, 2012). The findings of Hsu, Tan and Mohamad Zailani (2016) stated that when the product goes through the repair element, the possibility of the product going back to the secondary market is high. Instead of throwing it out to the bare land, the product goes back to the customer under re-sold. This aids in protecting the planet. This would bring out a positive image about the organization towards the customer. As a contribution to the above findings, Govindan, Soleimani and Kannan (2015), also supports that repairing option is known to be the first-class option, cause even at the lowest depreciated time period the product carries the highest residual value. In contrast to the earlier literature, however, Akdogan and Coskun (2012), believed that the quality of the repaired product would be affected. The author believes the main challenge would be to convince the consumer to repurchase the product in the secondary market. There could be some discrepancies within the perceptions of the consumers in owning second-hand valued products. In the view of following the repair option there are much of positive outputs the company could go through as contributing towards a sustainable environment, bringing positive financial performances since the cost of the process is very low in terms of the investment and the degree of disassembling the parts (Agyabeng-Mensah et al., 2020). Further to the above in avoiding the legal costs, fines, and penalties. Thus, less resources and less waste would be produced. However, Banihashemi, Fei and Chen (2019), is critical towards the findings of the other literature, because it is quite challenging for the organization in understanding the accurate option available for the returned product. If the organization does not have a clear understating about the RL options, the positivity would outcome the cost of the process and results in losses. Thus, the nature of the product should be thoroughly understood before moving with the RL options.

Remanufacturing is known to be another common disposition element available under RL. This process involves carefully inspecting the returned product and replacing the broken parts with the objective of increasing the quality of the product (Akdogan and Coskun, 2012). As per the TA, most of the scholars have investigated the effect it could arise from the company perspective. In the view of Govindan and Soleimani (2017), the option is used mainly in the CLSC. The producer has extended his responsibilities while it aids in gaining economic performance too. In supporting the above findings, Hsu, Tan and Mohamad Zailani (2016), also contributed their findings on the positive outcomes the remanufacturing process could bring not only towards the company but also to the customer's view. While benefiting the environment, the company is able to be competitive in the market economically and socially. However, Govindan and Soleimani (2017), argued that following the process should entirely depend on the demand for remanufactured products. Consumers should have a favorable attitude, and a favorable norm of motivation to buy the remanufactured product. One could argue that these products could bring economical, technological, and environmental benefits, yet the author believes if the demand for these products is not balanced the company would have to face a cost than a profit. Agyabeng-Mensah et al. (2020), stated in his literature that remanufacturing process would reduce the carbon footprint and the waste of the producer and aid in ensuring sustainable developments and also improving the product stewardship. On the flipside, Banihashemi, Fei and Chen (2019), firmly believe that it is a huge challenge for the producer to keep the identity and the functionality of the product as per the original. Even though it could be re-sell at a lower price in a secondary market, discount stores or charity, the question of finding an appropriate market is somewhat uncertain. Among the obscure literature, Govindan, Soleimani and Kannan (2015), also stated that pricing the remanufactured products also stands against within the remanufacturer and the retailer. Both parties could reassure and coordinate while pricing towards a win-win situation.

Overall, the literature pertaining to remanufacturing element supports the view that when the organization follows these disposal options the company could face positive externalities yet, there are some drawbacks in terms of the individual option.

It is well established from the TA; the disposal option of **reutilization** carries a high weightage on the disposal options available in RL practices. Reutilization is about when the customer returns the product, it does not go through any production developments yet again would be slightly cleaned along with some slight repair (Akdogan and Coskun, 2012). In a comprehensive literature review of Hsu, Tan and Mohamad Zailani (2016), stated that green purchasing has an effect of reuse. If the organization is conscious of procured materials on environmental goals, green purchasing would reflect in reuse. Thus, the purchasing decisions would have a significant positive effect on the supply chain and when green materials are used the element of reuse would bring the closed loop supply chain towards much sustainable practices (Hsu, Tan and Mohamad Zailani, 2016). Thus, it is evident these practices would bring more value towards the origination and also enhance the competitive advantage. The findings of the Govindan

and Soleimani (2017), proved that reuse could be used as a process within the organization in order to reduce the waste and the study further analyzed the ways in which the organization could use internal programs that to be collaborated with the consumers in reducing waste and enhancing sustainability. On the flip side, it was quite surprising to view that even though these mechanisms are in place, most importantly the customer perceptions of using the reused product, is highly questionable (Govindan and Soleimani, 2017). Yet the availability of these highly advanced processes, lack of technology, the required knowledge, and skills in developing the used products with minimum energy is still in the primitive stage. These major drawbacks could be highly impacted on the organization sustainability. One could argue that the labour market could have a significant impact, the organization could open more vacancies in applying jobs to these processes. However, the author firmly believes that the most predominant key aspect is safeguarding the quality and also the cost involvement in developing the product under the reuse element. In the literature provided in Govindan and Bouzon (2018), however, it was found to be some discrepancies where there is somewhat complexity involved in redesigning the reuse process and some of the technological aspects are still at the primary stage. Mainly this could be found in the developing countries. Thus, the question of moving with these disposable options has been raised. Yet if the positive externalities outweigh the negative externalities, following these mechanisms would bring the sustainability practices into action.

Considering the manufacturing industry, the key factor of sustainable development could be achieved by reducing waste. **Recycling** is also known as "Turn Waste into Treasure" (Agyabeng-Mensah et al., 2020). The literature of the same journal observed that RL enables in preventing environmental pollution while collecting broken or used products for remanufacturing. Thus, it is a strategic resource for organizations. Thus, it was observed that recycled products have a possibility of providing a first and foremost competitive advantage because recycled materials provide another chance towards the production process. Adding more, improving the product stewardship creates the image of the firm, being responsible for what it puts out into the environment. However, the literature of Banihashemi, Fei and Chen (2019), firmly believes that recycling disposable option could be much more expensive. The process includes extracting the reusable materials from the used or malfunctioning product. Thus, it was understood that the functionality along with the originality of the product could be lost. There are so many controversial and unclear observations of the linkage between economic performances and recycling procedures. Some authors clearly claim that there is a significant positive relationship between recycling system and economic performance whereas some authors do not agree to the above. Thus, the question of following this process is still in the grey field. Other researchers however, stated that recycling methods would bring huge economic benefits to the firm, and this is sort of a motivational tool through eco-logical aspect and also through technological innovations (Govindan and Soleimani, 2017). In the review of Hsu, Tan and Mohamad Zailani (2016), stated that if the firm is following green purchasing within the supply chain, the firm would be able to reduce the cost of

recycling too while minimizing the environmental impact in every stage of the product life cycle. However, Hsu, Tan and Mohamad Zailani (2016), argued that it is the responsibility of the firm to enhance the reliability of the recycled products within the mindset of the customers. Through R&D along with reengineering their production processes the firms would open doors to the customers in demanding more of the recycled products. On the other hand, Govindan, Soleimani and Kannan (2015), are much more concerned about the product type. If only the product has no, or low residual value recycling process could be collaborated within a returned product. Literature observes that the cost of recycling a returned product with a high residual value is creating more costs to the firm than reducing. Therefore, the nature of the product should be considered prior to applying the practices. Nevertheless, the author believes if the availability and the nature of the product is somewhat approved, it is better to follow these disposal options to be environmentally sensitive than becoming a cost center.

It is apparent from the TA; the final disposition element of the RL is known to **disposal**. The firms choose this mechanism when the product cannot be gone through any of the set disposable options and also if the product cannot be reused or sold to the secondary market (Govindan, Soleimani and Kannan, 2015). In supporting to the above literature Banihashemi, Fei and Chen (2019), also stated that this is known to be the incinerating the product or components under landfilling option. However, the same literature contends that disposal is the worst method because landfilling is in turn affecting the environment and social dimensions. It clearly raises controversial views on the firm's responsibilities of saving the environment. The disposal element would not bring any benefit to the firm except the cost of land filling and incineration. As per the current situation, the availability of waste yards is much limited. Thus, the cost of the approval of waste yards is high. Nevertheless, this element is known to be another option because the firms should have product stewardship (Akdogan and Coskun, 2012). Further observations from the literature of Govindan and Bouzon (2018), stated that landfilling would completely ignore the main purpose of RL. Due to the scarcity of landfills the probability of having negative externalities is high. Due to the limited quota level, the firms would be giving limited access to the disposal certificates that would increase the cost of disposal. Agrawal, Singh and Murtaza (2015), also agree with the above literature expresses that disposal option has the lowest contribution in terms of gaining competitive advantage. Yet it depends on the quality, quantity, and time of the returned products. Therefore, the degree of uncertainty is high. Despite arguments, the author believes that disposal element might have some limitations but if the firm is able to follow these practices, they could at least move the hazardous parts from the product and dispose the rest in the best possible way. This would lead to more customer satisfaction. The most effective and efficient matter could be analyzed and with the combination of more innovative practices, the firm could improve the waste of disposal while conserving the energy and resources.

This in turn would safeguard the internal and external stakeholders while enhancing the profitability and the productivity of the firm. Light of evidence suggests that the element of GRL has its own pros and cons. It is the responsibility of the firm to understand the

nature of the product and consider the best possible disposable options to be carried out while taking the product stewardship. This analyzation would reduce the cost, and the time incorporated with these practices. On the flip side, there could be so many arguments arising due to the barriers on RL implementations yet, the firm should not fail to recall the objective of the RL and their sustainable goals. It is the pure authority of the firm to balance out their economical aspect while centralizing the social and environmental aspects too.

Integration of GHRM towards GRLP
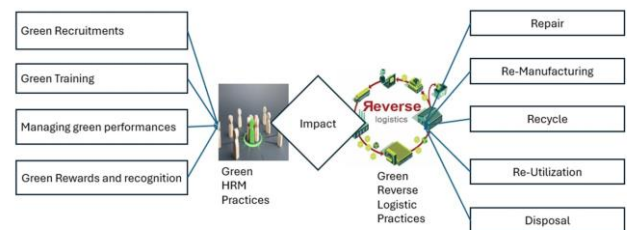
Figure_1 : Integration of GHRM towards GRLP.

After synthesizing the key elements of GHRM as well as GRL, the next step is identified as evaluating the relationship of these two variables. Many scholars attempted in understanding the interplay among these two variables, however the lack of literature pertaining to the direct relationship between those two variables author was able to identify few mediating variables through the thematic analysis. One of the valuable parts of any organization is HRM where it involves the sustainability aspect in terms of green recruitment, green training, managing green performances and green rewards and recognition. (Galpin et al., 2015). The author proposed an integrating framework establishing the link between the GHRM and GRL which also opens doors towards other inter disciplinary research studies. (Jabbour and de Sousa Jabbour, 2016). GHRM in any organization nurtures the adaptation of sustainable practices. These practices of environmental management are inclusive of GRL. Thus, it is undoubtedly, that the firms' sustainable goals are interconnected towards the GHRM which are aiming at sustainable operations management (Bag and Gupta, 2019).

Reading of the current available literature, uncover that adopting GHRM practices improve the firms eco logical performance while it also enhances in refining the environmental principles and values within the firm. In understanding what are the ways the organizations in the SA region, could convert the HRM practices into "Green" practices it could be more likely to support the overall sustainability of the organization. Different dimensions of GHRM and how it affects the factors of the GRL are discussed below.

Green recruitment is the main process in attracting the candidates who have the highest potential in contributing to the environmental issues the organization is currently facing. When recruiting the right candidates with the green knowledge, that could be applied to

the green practices. In the view of Vo and Phong (2023), green recruitment plays a major role in GRLP. New green ideas, new green knowledge could assist GRL in achieving green environmental objectives. This knowledge could aid in improving the existing production process mainly in the recycling aspect (Zhang, Zhang and Zhou, 2021). The author views that GHRM, green recruitment could also impact positively on reutilization, repair, remanufacturing, and disposal aspects too. The knowledge and skills could be utilized in bringing in new and innovative mechanisms in developing those GRLP. The knowledge and skills on the business activities should be utilized among the available resources and focus mainly on reduction, reusing, and recycling in the most economical or best possible way rather than negatively impacting the environment continuously.

GRL process is a very complex process that involves the amalgamation of many other business processes. Green training thus, becomes very vital in adopting the right set of excellence, selecting the accurate partners among the supply chain process, finalizing the logistics services among the providers, quality checks, remanufacturing process, disassembling the products as of (Hall et al., 2013). These mechanisms need the proper green training. If not GHRM as well as the GRL would be known as a cost center. To face the inbound and outbound challenges, the employees need training to enhance their knowledge. Classification of the returned products, managing the transportation in the most efficient manner, providing the right guidance, understanding the needs of the customers are essential in establishing the proper GRL practices. In the literature of Zaid et al. (2018), it was revealed that green training is positively impacting the TBL sustainability. Thus, the author views that green training is crucial yet essential in integrating GRLP in the manufacturing firms.

Collaborative efforts carried out by firms enable us to manage the green performances of the organization. Questioning of the training courses are on the right track, are there any gaps among these training courses, the effectiveness of those training courses, are some of the ways they could manage the green performances. Gunasekaran and Latan (2015), identified that the technical factors along with the human factors are essential sustainable developments. When the performances of these individuals are managed well their practices would develop and enhance the commitment level of those employees and the organization citizenship would increase (Menon, 2012). The current procedures the employees are using in the GRL processes could be monitored and if any gaps are found it could be managed. These prudent decisions are directly impacting the sustainable developments positively (Mangla et al., 2016).

Jabbour et al. (2016), identified green R&R is about giving recognition to the employees in their ecological performances. When the individuals are rewarded for their green talents, it is no doubt that the return is imposing. It aids in encouraging adopting the sustainable culture within the employees (Ahmad, 2015). The literature pertaining to Zang (2019), rewards scheme is all about individual incentives, team incentives, organization-based incentives. These incentive schemes could act as rewards that in turn work for the betterment of the organization. When the employees are rewarded for their green actions, the others are

motivated to accomplish much more comprehensive manners in attaining sustainability. Rewarding could optimize the work values of the employees, and these improvements could in turn aid in improving the overall value of the organization. The value of the organization could be achieved environmentally, socially, and economically. These are the main attributes of the adaptations of GRLP.

As in the long run, the sustainability of the manufacturing sector is way forward in adopting the GRLP, while it is leading towards the high quality of the firm as well as the social context. Hence, GHRM and GRLP is a scenario that is interrelated with sustainability, as eventually lead the way to achieve the TBL goals.

Practical Implications

Ever changing demand on the lead time and cost on each delivery to customers with rapid changes in product specifications, low volumes, and high varieties; manufacturing organizations tend to limit their overall product stewardship up to the delivery and to invoice. This will be counterproductive on the global sustainability goals.

The main aim of the current study was to determine the impact of integrating GHRM (Green Recruitment, Green Training and Development, Green Managing the performances, and Green Rewarding the sustainability) towards the GRL practices (Repair, Recycle, Remanufacture Reuse and Disposal) in the manufacturing industries in the South Asian region. It was quite significant to observe that the manufacturing industries have now become conscious that GHRM practices are vital in incorporating GRL practices into their operations. The empirical evidence showed that GHRM practices are essential in incorporating sustainability within the firms where one component is known to be the GRL.

Considering the practicality of this research towards the organizations, First the organization should empower the existing management to include the environmentally strategic goals into their visions and towards their sustainable goals. Thereafter the GHRM managers should be empowered in recruiting more candidates with a passion to contribute towards their strategic goals and who are willing to retain their skills towards rewards. Preparation of green tasks and bridging the gaps among those new recruiters while providing green training programs and also strengthening the current employee's green knowledge and skills. Despite the high training costs and time, it should be noted that the availability of GHRM would not only help the organization but also aid the supply chain partners as suppliers and customers too. It is no doubt that it would create a ripple effect. These sustainability practices also impact consumption and production significantly positively. Green management of performances enable the managers to find the gaps with the employees and set affordable green targets. When those targets are achieved the employees will be rewarded. The managers should be dedicated to providing continuous training, managing performances, and rewarding the employees while motivating and improving their knowledge and skills.

Focusing on the GRL, this study supports the existing literature with the theoretical framework as how GRL implementation would

be easy when the firms is having GHRM practices. Managers should be taking prudent decisions when understanding the best possible RL disposable options to be carried out towards their product considering its nature. However, the return product quality, quality and time should be considered too. More innovative advanced technologies could be used in understanding the accurate RL process flows, profits, and the capacity. Nevertheless, the bottom line should be that the continuous commitment from the top management of the firms and understanding that with no proper RL practices the likability of the operations of the firm within the industry is very limited.

In terms of the current paper, it was evident that there is a positive relationship between the GHRM and the GRL. In understanding the overall sustainability of the organization, GHRM improves the eco logical effect on the organization and GRL mainly impacts the environmental performances of the organization. When adding the green initiatives, the likability of those impacts is significant and positive. Green recruitment, green training, managing green performances and green rewards and recognition thus have a positive and a significant impact on integrating the GRL elements into the manufacturing sector. The collaboration would essentially impact the sustainability in the view of environment, social and economic aspect of the manufacturing sector in the South Asian region.

Conclusion

Following sustainable strategies in the manufacturing industry is no longer a new scenario, but still in the primitive stage among the South Asian region. Collaborating in the GHRM context is not the only factor that drives the industry towards sustainability but integrating the GRLP with GHRM in creating a sustainable environment for the industry. Therefore, it is worth inquiring How far GHRM impacts towards the integration of GRLP in the manufacturing sector? and what outcome the collaboration could bring on? Thus, the significance of the paper is understood by the holistic framework in understanding the significant positive impact of GHRM and GRLP and the innovative mechanisms in upgrading the current practices followed by the industry. Many authors have contributed to the study area attaining that GHRM would bring positive impact on any organization in maintaining sustainability. (Zaid, Jaaron and Bon, 2018). This study would illuminate for future studies on relation to GHRM and environmental performances, Strategic green competencies, GRLP and environmental performances. Therefore, the author believes that the new framework, integrating the factors of GHRM and GRLP would be high yielding towards the manufacturing industry top management, partners in the supply chain, stakeholders, and policy makers. However, the current study has some few limitations as specifically understanding each element of GHRM impacts towards every factor of GRLP. Future research would include other sectors and how it impacts attaining green mechanisms. At long last, the model developed in the current study would be fruitful as the foundation for future empirical studies.

It is no doubt that the manufacturing industry is influencing the environment in a negative manner. Thus, the concerns about the environment have led towards the adaptations of sustainable

practices that in turn benefit the triple bottom line of social, environmental and economic aspects. Currently, the pressure arising from the environmental bodies, legislations and the changes in the consumer perspectives has made the firms obligated themselves to balance the environmental needs, social and economic needs. In the literature of Yong, Yusliza and Fawehinmi (2019), it has stated that this could be much of a challenge and would open doors to many other controversial views.

This is further elaborated in the articles of that the sustainable development is actively in presence under the RL activities. There are much research carried out in China, Thailand stating the collaboration of these activities against the sustainable developments and how positively it has been interconnected. Green recruitment aids in creating much motivated and dedicated candidates that contributes in creating an economic value to the firm (Longoni et al., 2018). In supporting the above literature (Zaid et al., 2018) also stated that GHRM positively in related to sustainable performances. Green training is essential to enhance knowledge and skills, that it turns could use in the adaptations of the RL structures. It is much complicated in producing the best and most reliable RL structures as per the nature of their products. Thus, green training and human capital plays a crucial role in adopting GRL practices (Ojo and Raman, 2019). Managing green performances is about finding the gaps of training and providing more reliable resources because having the green teams is enabling the managers in managing the flows of the reverse logistics and take crucial decisions that positively affect the sustainability performances Ojo and Raman (2019), and Mangla et al., 2016). Green rewards and recognition are the final utmost important element in GHRM. (Albloush et al. (2022). When employees are motivated through rewards, the green developments of performances of any individual work would enhance their work values, and eventually organisational performance. (Liu and Lin 2020).

Currently, no manufacturing organization could ignore the environmental aspects thus, most of the manufacturing firms are adopting GRL practices for their corporate competence. Therefore, manufacturing industries could practice these mechanisms through the developments of the firm through GHRM. This all-inclusive framework provides a green perspective on the GHRM and how effective GHRM practices significantly positively impact towards the adaptation of GRL. ON the basis of major findings, GHRM is a vital component in the firms and the adoptability of GRL would aim at reducing the global ecological matters, as well as promoting activities that would reduce the pollution.

References

1. Ababneh, O.M.A. (2021). How Do Green HRM Practices Affect Employees' Green behaviors? the Role of Employee Engagement and Personality Attributes. *Journal of Environmental Planning and Management*, 64(7), pp.1–23. https://doi.org/10.1080/09640568.2020.1814708.

2. Agrawal, S., Singh, R.K. and Murtaza, Q. (2015). A Literature Review and Perspectives in Reverse Logistics. *Resources, Conservation and Recycling*, [online] 97,

pp.76–92.https://doi.org/10.1016/j.resconrec.2015.02.009.

3. Agyabeng-Mensah, Y., Ahenkorah, E., Afum, E., Nana Agyemang, A., Agnikpe, C. and Rogers, F. (2020). Examining the Influence of Internal Green Supply Chain practices, Green Human Resource Management and Supply Chain Environmental Cooperation on Firm Performance. *Supply Chain Management: An International Journal*, https://doi.org/10.1108/scm-11-2019-0405.

4. Akdoğan, M.Şükrü. and Coşkun, A. (2012). Drivers of Reverse Logistics Activities: an Empirical Investigation. *Procedia - Social and Behavioral Sciences*, 58, pp.1640–1649. https://doi.org/10.1016/j.sbspro.2012.09.1130.

5. Arulrajah, A., Opatha, H.H.D.N.P. and Nawaratne, N.N.J. (2015). Green Human Resource Management Practices: a Review. *Sri Lankan Journal of Human Resource Management* , 5(1), pp.1–16.

6. Bag, S. and Gupta, S. (2019). Examining the Effect of Green Human Capital Availability in Adoption of Reverse Logistics and Remanufacturing Operations Performance. *International Journal of Manpower*, 41(7), pp.1097–1117, https://doi.org/10.1108/ijm-07-2019-0349.

7. Banihashemi, T.A., Fei, J. and Chen, P.S.-L. (2019). Exploring the Relationship between Reverse Logistics and Sustainability Performance. *Modern Supply Chain Research and Applications*, https://doi.org/10.1108/mscra-03-2019-0009.

8. Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), pp.77–101. https://doi.org/10.1191/1478088706qp063oa.

9. Dudovskiy, J. (2018) The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance. https://research-methodology.net/about-us/ebook

10. Galpin, T., Whitttington, J.L. and Bell, G. (2015). Is Your Sustainability Strategy sustainable? Creating a Culture of Sustainability. *Corporate Governance: the International Journal of Business in Society*, 15(1), pp.1–17. https://doi.org/10.1108/cg-01-2013-0004.

11. Govindan, K. and Bouzon, M. (2018). From a Literature Review to a multi-perspective Framework for Reverse Logistics Barriers and Drivers. *Journal of Cleaner Production*, 187, pp.318–337. https://doi.org/10.1016/j.jclepro.2018.03.040.

12. Govindan, K. and Soleimani, H. (2017). A Review of Reverse Logistics and closed-loop Supply chains: a Journal of Cleaner Production Focus. *Journal of Cleaner Production*, 142(1), pp.371–384. https://doi.org/10.1016/j.jclepro.2016.03.126.

13. Govindan, K., Soleimani, H. and Kannan, D. (2015). Reverse Logistics and closed-loop Supply chain: a Comprehensive Review to Explore the Future. *European Journal of Operational Research*, 240(3), pp.603–626.

14. Grant, D.B., Trautrims, A. and Chee Yew Wong (2015). *Sustainable Logistics and Supply Chain Management : Principles and Practices for Sustainable Operations and Management*. London, United Kingdom ; Philadelphia, Pa: Kogan Page Limited.

15. Hameed, Z., Khan, I.U., Islam, T., Sheikh, Z. and Naeem, R.M. (2020). Do Green HRM Practices Influence employees' Environmental performance? *International Journal of Manpower*, https://doi.org/10.1108/ijm-08-2019-0407.

16. Hsu, C.-C., Tan, K.-C. and Mohamad Zailani, S.H. (2016). Strategic orientations, Sustainable Supply Chain initiatives, and Reverse Logistics. *International Journal of Operations & Production Management*, 36(1), pp.86–110. https://doi.org/10.1108/ijopm-06-2014-0252.

17. Jabbour, A., Frascareli, F. and Jabbour, C. (2015). Green Supply Chain Management and Firms' performance: Understanding Potential Relationships and the Role of Green Sourcing and Some Other Green Practices. *Resources, Conservation and Recycling*, 104, pp.366–374. https://doi.org/10.1016/j.resconrec.2015.07.017.

18. Jabbour, C.J.C. and de Sousa Jabbour, A.B.L. (2016). Green Human Resource Management and Green Supply Chain Management: Linking Two Emerging Agendas. *Journal of Cleaner Production*, [online] 112(3), pp.1824–1833. https://doi.org/10.1016/j.jclepro.2015.01.052.

19. Jabbour, C.J.C., Jugend, D., Jabbour, A.B.L. de S., Gunasekaran, A. and Latan, H. (2015). Green Product Development and Performance of Brazilian firms: Measuring the Role of Human and Technical Aspects. *Journal of Cleaner Production*, [online] 87, pp.442–451. https://doi.org/10.1016/j.jclepro.2014.09.036.

20. Kumar, R., Singh, R.K. and Shankar, R. (2015). Critical Success Factors for Implementation of Supply Chain Management in Indian Small and Medium Enterprises and Their Impact on Performance. *IIMB Management Review*, [online] 27(2), pp.92–104. https://doi.org/10.1016/j.iimb.2015.03.001.

21. Longoni, A., Luzzini, D. and Guerci, M. (2018). Deploying Environmental Management across Functions: the Relationship between Green Human Resource Management and Green Supply Chain Management. *Journal of Business Ethics*, [online] 151(4), pp.1081–1095. https://doi.org/10.1007/s10551-016-3228-1.

22. Mishra, P. (2017). Green Human Resource Management. *International Journal of Organizational Analysis*, 25(5), pp.762–788. https://doi.org/10.1108/ijoa-11-2016-1079.

23. Mugoni, E., Kanyepe, J. and Tukuta, M. (2024). Sustainable Supply Chain Management Practices (SSCMPS) and Environmental performance: a Systematic Review. *Sustainable Technology and Entrepreneurship*, [online] 3(1), p.100050. https://doi.org/10.1016/j.stae.2023.100050.

24. Ojo, A.O. and Raman, M. (2019). Role of Green HRM Practices in Employees' Pro-environmental IT Practices. *Advances in Intelligent Systems and Computing*, pp.678–688. https://doi.org/10.1007/978-3-030-16181-1_64.

25. Ojo, A.O., Tan, C.N.-L. and Alias, M. (2020). Linking Green HRM Practices to Environmental Performance through pro-environment Behaviour in the Information Technology Sector. *Social Responsibility Journal*, ahead-of-print(ahead-of-print). https://doi.org/10.1108/srj-12-2019-0403.

26. Pham, N.T., Hoang, H.T. and Phan, Q.P.T. (2019). Green Human Resource management: a Comprehensive Review and Future Research Agenda. *International Journal of Manpower*, 41(7), pp.845–878. https://doi.org/10.1108/ijm-07-2019-0350.

27. Richnak, P. and Gubova, K. (2021). Green and Reverse Logistics in Conditions of Sustainable Development in Enterprises in Slovakia. *Sustainability*, 13(2), p.581. https://doi.org/10.3390/su13020581.

28. Roscoe, S., Subramanian, N., Jabbour, C.J.C. and Chong, T. (2019). Green Human Resource Management and the Enablers of Green Organisational culture: Enhancing a firm's Environmental Performance for Sustainable Development. *Business Strategy and the Environment*, 28(5), pp.737–749.

29. Saeed, B., Afsar, B., Hafeez, S., Khan, I., Tahir, M. and Afridi, M. (2019). Promoting employee's Proenvironmental Behavior through Green Human Resource Management Practices. *Corporate Social Responsibility and Environmental Management*, [online] 26(2), pp.424–438. https://doi.org/10.1002/csr.1694.

30. Saunders, M., Lewis, P. and Thornhill, A. (2016) Research Methods for Business Students. 7th Edition, Pearson, Harlow.

31. Ullah, M. (2017). Integrating Environmental Sustainability into Human Resource management: a Comprehensive Review on Green Human Resource Management (Green HRM) Practices. *Maghreb Review of Economics and Management*, 4(1), pp.6–22.

32. Vo, H. and Phong , N. (2023). Greening the Vietnamese supply chain: The influence of green logistics knowledge and intellectual capital. *Heliyon*, 9(5), pp.e15953–e15953. https://doi.org/10.1016/j.heliyon.2023.e15953.

33. Yong, J.Y., Yusliza, M.-Y. . and Fawehinmi, O.O. (2019). Green Human Resource Management. *Benchmarking: an International Journal*, 27(7). https://doi.org/10.1108/bij-12-2018-0438.