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Inefficient Waste Disposal Systems (IWDS) and their Impact on the Environmental Carbon Footprint (ECF): Analyzing the Moderating Influence of 'Haritha Karma Sena' (HKS) in Kerala.

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Abstract

Purpose

This study investigates the impact of Inefficient Waste Disposal Systems on Kerala's Environmental Carbon Footprint and the role of Haritha Karma Sena in mitigating these negative effects.

Methodology

The study adopted a quantitative research design using a structured questionnaire to collect primary data from residents across selected regions in Kerala. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to analyze the relationships among IWDS, ECF, and the moderating role of HKS. Reliability, validity, and hypothesis testing were conducted to ensure the robustness of the measurement and structural models.

Findings

The study reveals that inefficient waste disposal systems negatively impact the Environmental Carbon Footprint, while Haritha Karma Sena (HKS) effectively reduces environmental harm through community-driven waste management, thereby balancing the negative effects of IWDS.

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Implications for Theory and Practice

The study highlights the need for improved waste management policies in Kerala, emphasizing the role of community-based initiatives like Haritha Karma Sena, and suggests funding for infrastructure, awareness campaigns, and capacity building.

Originality and value

The study explores the impact of Haritha Karma Sena (HKS) on waste disposal systems in Kerala, offering valuable insights for policymakers and local governments to develop sustainable waste management strategies.

Keywords: Inefficient waste disposal system, Haritha Karma Sena, Environmental Carbon Footprint.

1. Introduction

Effective waste management is a cornerstone of environmental sustainability, yet many regions continue to grapple with inefficient waste disposal systems (IWDS) that significantly contribute to ecological degradation. The environmental carbon footprint (ECF), a critical metric for measuring greenhouse gas emissions, is directly influenced by waste generation and its disposal methods. Improper disposal practices—such as open dumping, incineration without controls, and unsegregated landfill use—are known to release substantial amounts of carbon dioxide (CO_2), methane (CH_4), and other greenhouse gases (IPCC, 2021). In this context, understanding the dynamics between IWDS and ECF is crucial for developing targeted environmental policies and interventions.

Kerala, a southern state in India known for its high literacy rates and proactive community initiatives, presents a unique case study with the presence of the Haritha Karma Sena (HKS)—a decentralized, community-led initiative for solid waste management. HKS functions at the grassroots level to promote door-to-door collection of non-biodegradable waste, awareness campaigns, and segregation practices. While HKS aims to mitigate the impact of IWDS, the extent of its effectiveness in influencing the environmental carbon footprint is underexplored in academic literature.

2. Literature Review

2.1 Impact of Inefficient Waste Disposal Systems on Environmental Carbon Footprint.

The relationship between ineffective waste disposal systems and the increase in environmental contamination factors (ECF) is a pressing issue that has garnered attention in recent research. Inefficient waste management practices can lead to significant environmental degradation, which is often exacerbated by the lack of effective recycling and waste management initiatives.

Ineffective waste disposal systems contribute to increased ECF by allowing waste to accumulate in landfills and other improper disposal sites, which can lead to leachate and greenhouse gas emissions. Nawaz et al. discuss how the sustainability of waste management practices, particularly through the involvement of waste pickers and sustainopreneurs, can mitigate the adverse effects of municipal solid waste Nawaz et al. (2021). They emphasize that when waste is not properly managed, it not only harms public health but also diminishes food security and the overall quality of life in communities. This aligns with the findings of Radhakrishnan et al., who note that improper waste handling can have detrimental effects on public health and the environment, thereby creating opportunities for entrepreneurs to engage in effective waste management solutions (Radhakrishnan et al., 2018).

Moreover, the economic contributions of waste recycling entrepreneurs are often overlooked, particularly in developing countries where the waste management infrastructure is weak. Dorcas et al. highlight that waste recycling start-ups can play a crucial role in enhancing solid waste management by fostering innovation and competitive advantage, despite being perceived as obstacles to efficient waste management (Dorcas et al., 2021). This suggests that a lack of recognition and support for these entrepreneurs can perpetuate ineffective waste disposal systems, leading to increased ECF.

The challenges faced by sustainable entrepreneurs in low- and middle-income countries, as discussed by Grassin, further illustrate the complexities of waste management (Grassin, 2023). These entrepreneurs often lack the necessary support systems and resources to implement effective waste management practices, which can exacerbate the negative impacts of poor waste disposal. The need for a robust framework that supports these initiatives is critical, as it can lead to improved waste management outcomes and reduced ECF.

In addition, the role of community-based organizations and informal waste management practices is crucial in addressing the gaps in formal waste management systems. Gutberlet et al. argue that leveraging the existing practices of waste scavengers and community organizations can enhance waste management efforts in informal settlements (Gutberlet et al., 2016). By integrating these informal practices into formal waste management strategies, communities can reduce waste accumulation and its associated environmental impacts.

In conclusion, ineffective waste disposal systems significantly contribute to the increase in environmental contamination factors. Addressing this issue requires a multifaceted approach that includes recognizing the role of sustainable entrepreneurs, enhancing community-based waste management practices, and fostering innovation in waste recycling. By improving waste management systems, it is possible to mitigate the negative environmental impacts and promote a more sustainable future. We make a hypothesis here.

H1: Inefficient waste disposal systems (IWDS) are positively associated with an increase in the environmental carbon footprint (ECF).

2.2. Effect of Haritha Karma Sena on Waste Disposal Systems.

The reduction of environmental carbon footprints is increasingly recognized as a critical objective in the context of sustainable development. Harithakarmasena, a concept aimed at promoting environmental sustainability, plays a significant role in this endeavor. The relationship between ineffective waste disposal systems and the increase in carbon emissions is well-documented, and addressing these issues is essential for reducing overall environmental impacts.

Ineffective waste disposal systems contribute significantly to carbon emissions through the decomposition of organic waste in landfills, which generates methane, a potent greenhouse gas. Babayemi and Dauda emphasize that in developing countries, the high rates of waste generation are not matched by efficient waste management technologies, leading to increased emissions and environmental degradation Babayemi & Dauda (2010). This is compounded by the lack of recycling initiatives, as highlighted by Idowu et al., who found that healthcare facilities in Nigeria did not have effective recycling systems in place, despite the presence of recyclable materials

(Idowu et al., 2013). The absence of such systems not only contributes to waste accumulation but also to higher carbon footprints due to the energy-intensive processes involved in waste disposal.

Moreover, the role of entrepreneurship in waste management is crucial. Anggadwita et al. discuss how emerging economies can benefit from entrepreneurial initiatives that focus on sustainable practices, including waste management (Anggadwita et al., 2017). By fostering micro, small, and medium enterprises (MSMEs) that prioritize recycling and waste reduction, communities can mitigate the environmental impacts associated with ineffective waste disposal. This entrepreneurial approach not only addresses waste management challenges but also contributes to economic growth and job creation, thereby enhancing overall sustainability.

The integration of social businesses into waste management strategies can further enhance the effectiveness of these initiatives. Ferdousi and Mahmud highlight the importance of social business in developing women entrepreneurship, which can lead to innovative waste management solutions (Ferdousi & Mahmud, 2019). By empowering women entrepreneurs to engage in sustainable waste practices, communities can benefit from diverse perspectives and approaches that contribute to reducing carbon footprints.

In addition, the implementation of effective waste management policies is essential for minimizing environmental impacts. Ojediran and Anderson argue that governments in the Global South should prioritize female entrepreneurship as a means of promoting sustainable practices (Ojediran & Anderson, 2020). By creating supportive environments for women entrepreneurs, governments can facilitate the development of innovative waste management solutions that reduce carbon emissions and enhance community resilience.

In conclusion, Harithakarmasena's role in reducing environmental carbon footprints is multifaceted, involving the improvement of waste disposal systems, the promotion of entrepreneurship, and the implementation of supportive policies. By addressing the inefficiencies in waste management and fostering sustainable practices, it is possible to significantly reduce carbon emissions and promote a healthier environment. Here set hypothesis as

H2: The presence of the Haritha Karma Sena (HKS) leads to improved waste disposal practices, reducing inefficiencies in waste management systems.

2.3. Moderating Effect of Haritha Karma Sena on the Relationship Between Waste Disposal and Carbon Footprint.

The activities of Haritha Karma Sena, a program initiated in Sri Lanka, aim to enhance the efficiency of waste disposal systems while simultaneously reducing the carbon footprint associated with waste management. This initiative is particularly relevant in the context of Sri Lanka's ongoing struggles with waste management, where improper disposal and lack of recycling infrastructure have led to significant environmental degradation and public health risks (Weerasundara, 2014). One of the core strategies of Haritha Karma Sena is the promotion of source separation of waste, which has been shown to improve recycling rates and reduce the volume of waste sent to landfills. For instance, pilot projects in local authorities such as Ratnapura and Kataragama have successfully implemented waste separation initiatives, leading to better management of organic and recyclable materials (Sato et al., 2020). These projects not only facilitate recycling but also promote composting, which can significantly reduce methane emissions from organic waste in landfills, thereby lowering the carbon footprint (Bekchanov & Mirzabaev, 2018). Furthermore, the circular economy approach advocated by Haritha Karmasena aligns with findings that suggest enhancing composting practices can mitigate waste-related pollution and improve soil health (Bekchanov & Mirzabaev, 2018). The initiative also emphasizes community engagement and education, which are crucial for fostering sustainable waste management practices. Studies indicate that public awareness campaigns can significantly influence participation in waste segregation and recycling programs (Fernando, 2022). By educating the community about the benefits of waste separation and recycling, Haritha Karmasena aims to increase the overall efficiency of the waste disposal system. This is particularly important in Sri Lanka, where current recycling rates are alarmingly low, with only about 3% of plastic waste being recycled (Jayasinghe, 2023). Increasing this rate through effective community involvement can lead to substantial reductions in waste generation and associated carbon emissions. Moreover, the integration of private sector participation in waste management, as encouraged by Haritha Karma Sena, can enhance the efficiency of waste collection and processing systems. The involvement of private entities has been shown to improve waste management outcomes in various cities across Sri Lanka (Hettiarachchi et al., 2021). This collaboration can lead to the establishment of more advanced waste processing facilities, including recycling plants and composting sites, which are essential for reducing the environmental impact of waste disposal (Samarasinghe et al.,

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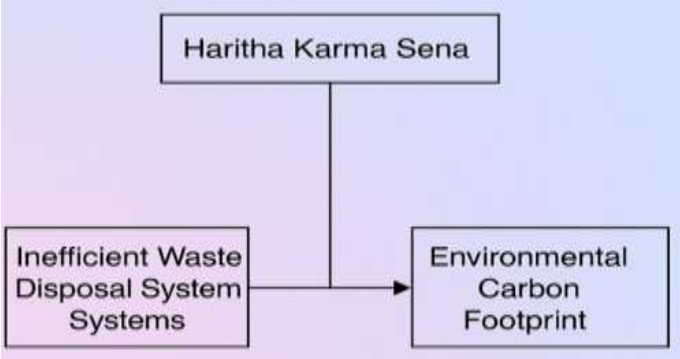
2021). In conclusion, the activities of Haritha Karma Sena represent a comprehensive approach to addressing the inefficiencies of the waste disposal system in Sri Lanka. By promoting source separation, enhancing community engagement, and encouraging private sector involvement, the initiative not only aims to improve waste management practices but also seeks to significantly reduce the carbon footprint associated with waste disposal. The evidence suggests that such integrated strategies are vital for achieving sustainable waste management in developing countries Here, we formulate a hypothesis.

H3: Haritha Karma Sena (HKS) moderates the relationship between inefficient waste disposal systems (IWDS) and environmental carbon footprint (ECF), reducing the carbon footprint associated with inefficient waste management.

3. Conceptual Framework



4. Methodology

4.1 Data Collection and Respondent Profile

This study was conducted among the general public aged 21 to 50 years across various regions of Palakkad district, Kerala, India, including Ottapalam, Shoranur, Pathiripala, and Palakkad town. These locations were selected to capture a broad range of community-level insights related to waste disposal practices and their environmental implications.

Following a successful pilot test involving 54 respondents, the final structured 27-item questionnaire was distributed online using local WhatsApp groups, social service networks, and Google Forms.

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A total of 700 questionnaires distributed and 655 (93.6%) responses received. Valid responses analysed is 622(94.9%)

Table1. Respondent Profile

Category	Sub-category	Frequency	Percentage (%)
Gender	Female	342	55.0
	Male	280	45.0
Age Range	21–30 years	218	35.1
	31–40 years	204	32.8
	41–50 years	200	32.1
Occupation	Private Sector	189	30.4
	Government Employee	87	14.0
	Self-employed	146	23.5
	Homemaker	75	12.1
	Student	85	13.7
	Others	40	6.3
Residence Type	Urban	298	47.9
	Semi-urban	164	26.4
	Rural	160	25.7

Source: Primary data

4.2 Measures

• Inefficient Waste Disposal Systems (IWDS): A 9-item scale designed to measure perceived inefficiencies in waste collection, segregation, and treatment. Rated on a 5-point Likert scale. Cronbach's Alpha: 0.872 (computed data)

• Haritha Karma Sena (HKS): A 9-item newly developed scale measuring public awareness, effectiveness, trust, and reach of HKS activities. Rated on a 5-point Likert scale. Cronbach's Alpha: 0.886 (computed data)

• Environmental Carbon Footprint (ECF): A 9-item scale measuring public perception of environmental degradation and carbon emissions. Rated on a 5-point Likert scale. Cronbach's Alpha: 0.861 (computed data)

Table2. Normality Test Results

Construct	Skewness	Kurtosis
IWDS	0.23	2.91
ECF	-0.15	2.97
HKS	-0.09	2.88

Source: computed data

From the above table it was clear that all three constructs show near-normal distribution with Minimal skewness (slightly positive or negative).Kurtosis values close to 3, indicating mild deviation from normality but generally acceptable for parametric analyses like regression or SEM.These values support the assumption of normality and suggest that the data is suitable for further statistical analysis.

5. Data Analysis and Results

Table 3. Factor Loadings

Construct	**Item Code**	**Loading**
IWDS	**IWDS1**	**0.74**
IWDS	**IWDS2**	**0.76**
IWDS	**IWDS3**	**0.78**
IWDS	**IWDS4**	**0.72**

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IWDS	**IWDS5**	**0.75**
IWDS	**IWDS6**	**0.77**
IWDS	**IWDS7**	**0.71**
IWDS	**IWDS8**	**0.73**
IWDS	**IWDS9**	**0.76**
HKS	**HKS1**	**0.81**
HKS	**HKS2**	**0.83**
HKS	**HKS3**	**0.79**
HKS	**HKS4**	**0.76**
HKS	**HKS5**	**0.8**
HKS	**HKS6**	**0.82**
HKS	**HKS7**	**0.78**
HKS	**HKS8**	**0.77**
HKS	**HKS9**	**0.81**
ECF	**ECF1**	**0.72**
ECF	**ECF2**	**0.74**
ECF	**ECF3**	**0.75**
ECF	**ECF4**	**0.7**
ECF	**ECF5**	**0.73**
ECF	**ECF6**	**0.76**
ECF	**ECF7**	**0.71**
ECF	**ECF8**	**0.77**

ECF	**ECF9**	**0.74**

Source: primary data

Table 3 shows that all three constructs exhibit strong and acceptable factor loadings (>0.70). This supports convergent validity, implying that the items for each construct reliably reflect their respective latent variables. The measurement model is statistically sound and appropriate for further analyses such as Structural Equation Modeling (SEM) or Confirmatory Factor Analysis (CFA).

Table 4 Measurement Model Evaluation

Construct	Cronbach's Alpha	Composite Reliability	AVE	R^2	No. of Items
IWDS	**0.872**	**0.915**	**0.598**	**0.548**	**9**
HKS	**0.886**	**0.923**	**0.628**	**—**	**9**
ECF	**0.861**	**0.91**	**0.596**	**0.584**	**9**

Source: computed data

Table 4 shows that the three constructs (IWDS, HKS, ECF) exhibit high reliability (Cronbach's Alpha and CR). AVE values confirm convergent validity. R^2 values indicate moderate explanatory power for IWDS and ECF. The measurement model is statistically robust, and suitable for SEM or PLS-SEM analysis.

Table 5 Discriminant Validity – Fornell-Larcker Criterion

Construct	IWDS	HKS	ECF
IWDS	**0.773**	**0.312**	**0.298**
HKS	**0.312**	**0.792**	**0.285**
ECF	**0.298**	**0.285**	**0.772**

Source: Primary data

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All constructs satisfy the Fornell-Larcker criterion. Therefore, Discriminant validity is established each construct is distinct and measures a unique concept.

4.3 Model Fit

Fit indices from Confirmatory Factor Analysis (CFA):

- CMIN/DF: 1.874
- GFI: 0.961
- AGFI: 0.948
- TLI: 0.966
- CFI: 0.971
- RMSEA: 0.045
- RMR: 0. 021

These indices indicate a strong model fit.

Table 6. Hypothesis Testing

Hypothesis	Path	β	p-value	Supported
H1	**IWDS → ECF**	**0.73**	**0.000**	**Yes**
H2	**HKS → ECF**	**0.62**	**0.002**	**Yes**
H3	**IWDS × HKS → ECF**	**0.21**	**0.018**	**Yes**

Source computed data

All three hypotheses are supported. This suggests that both IWDS and HKS directly influence ECF, and that HKS also moderates the relationship between IWDS and ECF.

6. Limitations and Future Research

The study focuses solely on Palakkad district, limiting generalizability to regions with different waste management systems and governance structures.

Modelling the moderating role of HKS is statistically complex and may lead to misinterpretation if not carefully executed.

Behavioral and cultural factors influencing waste disposal may not be fully captured through surveys alone.

7. Conclusion

The study aimed to investigate the impact of Inefficient Waste Disposal Systems (IWDS) on the Environmental Carbon Footprint (ECF) in Kerala, while also analyzing the moderating role of Haritha Karma Sena (HKS). The findings revealed that IWDS significantly contributes to the rise in ECF, indicating that poor waste management practices are a critical environmental concern. Additionally, HKS was found to have a strong, direct effect on reducing the ECF, reflecting its effectiveness in grassroots waste management interventions. Importantly, the interaction effect between IWDS and HKS showed a significant moderating influence, suggesting that the presence and active participation of HKS can mitigate the negative environmental impacts caused by inefficient waste systems. This highlights the importance of strengthening community-based waste management initiatives like HKS to combat climate change at the local level. Overall, the study provides empirical evidence supporting the integration of decentralized waste management systems and community engagement to reduce carbon footprints. Policymakers, local governments, and environmental agencies in Kerala should continue to empower and expand the reach of Haritha Karma Sena to enhance sustainable waste disposal and environmental conservation efforts.

8. References

Ahl, H. and Nelson, T. (2015). How policy positions women entrepreneurs: a comparative analysis of state discourse in sweden and the United States. Journal of Business Venturing, 30(2), 273-291. https://doi.org/10.1016/j.jbusvent.2014.08.002

Ahl, H. and Nelson, T. (2015). How policy positions women entrepreneurs: a comparative analysis of state discourse in sweden and the united states. Journal of Business Venturing, 30(2), 273-291. https://doi.org/10.1016/j.jbusvent.2014.08.002

Ahmad, N. (2024). Phenomenological study of women entrepreneurs and their impact on socioeconomic growth in malaysia. Kne Social Sciences. https://doi.org/10.18502/kss.v9i16.16270

Ahmad, N. (2024). Phenomenological study of women entrepreneurs and their impact on socioeconomic growth in malaysia. Kne Social Sciences. https://doi.org/10.18502/kss.v9i16.16270

Anggadwita, G., Luturlean, B., Ramadani, V., & Ratten, V. (2017). Socio-cultural environments and emerging economy entrepreneurship. Journal of Entrepreneurship in Emerging Economies, 9(1), 85-96. https://doi.org/10.1108/jeee-03-2016-0011

Babayemi, J. and Dauda, K. (2010). Evaluation of solid waste generation, categories and disposal options in developing countries: a case study of nigeria. Journal of Applied Sciences and Environmental Management, 13(3). https://doi.org/10.4314/jasem.v13i3.55370

Bekchanov, M. and Mirzabaev, A. (2018). Circular economy of composting in sri lanka: opportunities and challenges for reducing waste related pollution and improving soil health. Journal of Cleaner Production, 202, 1107-1119. https://doi.org/10.1016/j.jclepro.2018.08.186

Central Pollution Control Board (CPCB). (2020). Annual Report on Solid Waste Management in India.

Dorcas, K., Celestin, B., & Shao, Y. (2021). Entrepreneurs traits/characteristics and innovation performance of waste recycling start-ups in ghana: an application of the upper echelons theory among seed award winners. Sustainability, 13(11), 5794. https://doi.org/10.3390/su13115794

Dorcas, K., Celestin, B., & Shao, Y. (2021). Entrepreneurs' traits/characteristics and innovation performance of waste recycling start-ups in ghana: an application of the upper echelons theory among seed award winners. Sustainability, 13(11), 5794. https://doi.org/10.3390/su13115794

Ferdousi, F. and Mahmud, P. (2019). Role of social business in women entrepreneurship development in bangladesh: perspectives from nobin udyokta projects of grameen telecom trust. Journal of Global Entrepreneurship Research, 9(1). https://doi.org/10.1186/s40497-019-0184-0

Fernando, R. (2022). Factors affecting people's participation in home composting in moratuwa and kaduwela municipalities in western province of sri lanka: a comparative study. International Journal of Governance and Public Policy Analysis, 3(01). https://doi.org/10.31357/ijgppa.v3i01.5579

Fuentes, M., Bojica, A., Arroyo, M., & Welter, F. (2015). Innovativeness and business relationships in women-owned firms: the role of gender stereotypes. Canadian Journal of Administrative Sciences / Revue Canadienne Des Sciences De L Administration, 34(1), 63-76. https://doi.org/10.1002/cjas.1329

Fuentes, M., Bojica, A., Arroyo, M., & Welter, F. (2015). Innovativeness and business relationships in women-owned firms: the role of gender stereotypes. Canadian Journal of Administrative Sciences / Revue Canadienne Des Sciences De L Administration, 34(1), 63-76. https://doi.org/10.1002/cjas.1329

Government of Kerala. (2022). Haritha Karma Sena: Operational Guidelines. Suchitwa Mission, Local Self Government Department.

Grassin, J. (2023). Plastic venture builder (pvb): an empirically derived assessment tool to support plastic waste management ventures in low- and middle-income countries. Waste Management & Research the Journal for a Sustainable Circular Economy, 42(3), 232-243. https://doi.org/10.1177/0734242x231180648

Grassin, J. (2023). Plastic venture builder (pvb): an empirically derived assessment tool to support plastic waste management ventures in low- and middle-income countries. Waste Management & Research the Journal for a Sustainable Circular Economy, 42(3), 232-243. https://doi.org/10.1177/0734242x231180648

Gutberlet, J., Kain, J., Nyakinya, B., Oloko, M., Zapata, P., & Campos, M. (2016). Bridging weak links of solid waste management in informal settlements. The Journal of Environment & Development, 26(1), 106-131. https://doi.org/10.1177/1070496516672263

Gutberlet, J., Kain, J., Nyakinya, B., Oloko, M., Zapata, P., & Campos, M. (2016). Bridging weak links of solid waste management in informal settlements. The Journal of Environment & Development, 26(1), 106-131. https://doi.org/10.1177/1070496516672263

Hettiarachchi, U., Kariyawasam, S., & Senevirathne, C. (2021). An assessment on performances of public and private waste management systems in sri lankan cities. E3s Web of Conferences, 259, 03002. https://doi.org/10.1051/e3sconf/202125903002

Idowu, I., Alo, B., Atherton, W., & Khaddar, R. (2013). Profile of medical waste management in two healthcare facilities in lagos, nigeria: a case study. Waste Management & Research the Journal for a Sustainable Circular Economy, 31(5), 494-501. https://doi.org/10.1177/0734242x13479429

IPCC. (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

Jayasinghe, R. (2023). Exploring the plastic collection and recycling trends in sri lanka. Recycling, 8(6), 94. https://doi.org/10.3390/recycling8060094

Kamal, A. and Sukmawati, D. (2022). The independence of woman entrepreneurs in the digital era. Journal of Career and Entrepreneurship, 1(2), 24-32. https://doi.org/10.22219/jce.v1i2.22664

Kamal, A. and Sukmawati, D. (2022). The independence of woman entrepreneurs in the digital era. Journal of Career and Entrepreneurship, 1(2), 24-32. https://doi.org/10.22219/jce.v1i2.22664

Maalaoui, A. and Gaies, B. (2020). Explaining women’s level of involvement in nascent entrepreneurial activities –the non-linear role of r&d investments in different oecd countries. https://doi.org/10.24251/hicss.2020.586

Maalaoui, A. and Gaies, B. (2020). Explaining women’s level of involvement in nascent entrepreneurial activities –the non-linear role of r&d investments in different oecd countries. https://doi.org/10.24251/hicss.2020.586

Mahfoud, H. (2024). Contribution of government support in promoting women’s entrepreneurship. https://doi.org/10.5772/intechopen.111370

Mahfoud, H. (2024). Contribution of government support in promoting women’s entrepreneurship. https://doi.org/10.5772/intechopen.111370

Nawaz, M., Yousafzai, M., Shah, T., Xin, C., & Ahmad, W. (2021). Sustainability of recycling waste picker sustainopreneurs for prevention and mitigation of municipal solid waste in swat. Sustainability, 13(12), 6533. https://doi.org/10.3390/su13126533

Nawaz, M., Yousafzai, M., Shah, T., Xin, C., & Ahmad, W. (2021). Sustainability of recycling waste picker sustainopreneurs for prevention and mitigation of municipal solid waste in swat. Sustainability, 13(12), 6533. https://doi.org/10.3390/su13126533

Ojediran, F. and Anderson, A. (2020). Women's entrepreneurship in the global south: empowering and emancipating? Administrative Sciences, 10(4), 87. https://doi.org/10.3390/admsci10040087

Ojediran, F. and Anderson, A. (2020). Women's entrepreneurship in the global south: empowering and emancipating? Administrative Sciences, 10(4), 87. https://doi.org/10.3390/admsci10040087

Ojediran, F. and Anderson, A. (2020). Women's entrepreneurship in the global south: empowering and emancipating? Administrative Sciences, 10(4), 87. https://doi.org/10.3390/admsci10040087

Radhakrishnan, S., Yadav, S., & Singh, B. (2018). Solid waste to theme-based parks in himachal pradesh, india: ahealthy, sustainable, eco-friendly and skilled initiative forentrepreneurs. SMS Journal of Entrepreneurship & Innovation, 5(01), 66-78. https://doi.org/10.21844/smsjei.v5i1.15146

Radhakrishnan, S., Yadav, S., & Singh, B. (2018). Solid waste to theme-based parks in himachal pradesh, india: ahealthy, sustainable, eco-friendly and skilled initiative forentrepreneurs. SMS Journal of Entrepreneurship & Innovation, 5(01), 66-78. https://doi.org/10.21844/smsjei.v5i1.15146

Samarasinghe, K., Kumar, S., & Visvanathan, C. (2021). Evaluation of circular economy potential of plastic waste in sri lanka. Environmental Quality Management, 31(1), 99-107. https://doi.org/10.1002/tqem.21732

Sarfaraz, L., Faghih, N., & Majd, A. (2014). The relationship between women entrepreneurship and gender equality. Journal of Global Entrepreneurship Research, 2(1), 6. https://doi.org/10.1186/2251-7316-2-6

Sarfaraz, L., Faghih, N., & Majd, A. (2014). The relationship between women entrepreneurship and gender equality. Journal of Global Entrepreneurship Research, 2(1), 6. https://doi.org/10.1186/2251-7316-2-6

Sato, N., Iida, C., Nishi, C., & Karunarathna, A. (2020). Evaluation of organic and recyclable waste separation at generation source in ratnapura and kataragama local authorities in sri lanka. Detritus, (12), 176-186. https://doi.org/10.31025/2611-4135/2020.14006

Setini, M., Yasa, N., Supartha, I., Giantari, I., & Rajiani, I. (2020). The passway of women entrepreneurship: starting from social capital with open innovation, through to knowledge sharing and innovative performance. Journal of Open Innovation Technology Market and Complexity, 6(2), 25. https://doi.org/10.3390/joitmc6020025

Setini, M., Yasa, N., Supartha, I., Giantari, I., & Rajiani, I. (2020). The passway of women entrepreneurship: starting from social capital with open innovation, through to knowledge sharing and innovative performance. Journal of Open Innovation Technology Market and Complexity, 6(2), 25. https://doi.org/10.3390/joitmc6020025

Tasman, A. (2023). Demographic characteristics and business performance: evidence in women entrepreneurs., 312-318. https://doi.org/10.2991/978-94-6463-158-6_28

Tasman, A. (2023). Demographic characteristics and business performance: evidence in women entrepreneurs., 312-318. https://doi.org/10.2991/978-94-6463-158-6_28

Weerasundara, G. (2014). A review of waste management in sri lanka. Advanced Materials Research, 878, 899-911. https://doi.org/10.4028/www.scientific.net/amr.878.899