

ASSESSMENT OF SUSTAINABLE PRACTICES: BASIS FOR A LIVELIHOOD PROGRAM” (GREEN PRACTICES in the Municipality of Santa Cruz)

Marissa L. Dimarucot^a, Benjamin Arjona Jr.^b

^amarissadimarucot@lspu.edu.ph; ^bbenjaminarjona@lspu.edu.ph

Laguna State Polytechnic University, Santa Cruz Campus, Philippines 40049

Abstract

Transitioning to more environmentally friendly activities requires work in several societal sectors throughout the years. Although households have been overlooked as outstanding players among others, numerous studies have examined restaurants, businesses, and national governments as advocates of improvements regarding green practices. Local governments have a duty to educate individuals who live in their areas on the importance of adhering to rules and regulations. The practices awareness and sustainability of going green are the most important issues in municipal discussions. From the standpoint of a household's viewpoints in sustainable development, we look into the level of awareness and sustainability of the green practices in the Municipality of Santa Cruz in the province of Laguna. The data gathered using the Google Forms application and face to face serves as what the study is dependent on. The research indicated high levels of both awareness and sustainability, with awareness being more pronounced and no significant link between respondents' profiles and their sustainability in green practices. Local governments and stakeholders have been urged to strengthen teamwork and team collaboration in order to increase sustainability on green practices, such as improving bike and pedestrian traffic, maintaining and improving parks, business correspondence in environmental compliance, the healthcare waste system, converting waste into resources through the making of product development, improving recycling and composting programs and other green practices issues. Additionally, these programs can support both the people's lives and green practices specifically in this Municipality by using waste materials to improve livelihood efforts and a mindset of entrepreneurship.

Keywords: green practices; awareness; sustainability; household viewpoints

INTRODUCTION

The importance of the environment cannot be overstated, and everyone is concerned about maintaining its safety. Environmental problems facing the world today include pollution, overuse of resources, global warming, and an increase in waste. Residents' perception of the value of green practices in municipalities has increased as a result of growing awareness of the harm that comes from excessive use of energy, water, and resources as well as environmental degradation. Those that exercise environmental responsibility and awareness in the municipality do so with pride.

Pre-sorting household waste and encouraging public involvement in waste management are essential steps in the Pre-sorting household waste and fostering public participation in waste management are critical elements in the move to a circular economy. (Knickmeyer, 2020). MSW produced commercial, institutional, residential, and industrial sources. The majority of MSW (56.7%) is made up of residential waste and from filed Solid Waste Management Plans, some Environmental Management Bureau (EMB) Regional Offices contributed information on MSW sources.

Home composting (HC) is becoming a more significant factor to take into account when managing municipal organic waste (MOW) sustainably in developing nations, according to Loan et al. (2019). Municipal solid waste can manage in a variety of ways, including landfilling or composting, burning, recycling, and energy conversion. In many cities across the world, landfilling is the preferred way to dispose

of solid waste as stated by Berruti & Nanda (2021). People are attempting to "go green" at home more and more. According to Aishwarya, et al (2023), that in instance, it could imply making a deliberate effort to make their home more environmentally friendly. As stated by Pandey et al. (2018), that the encouragement of recycling and reuse in the home can also significantly reduce the amount of garbage that is produced. It encourages citizen participation in urban green infrastructure initiatives. (Barau, A.S., 2015). According to Miner, KJ (2020), that the nation of Nigeria produced around 290,000 tons of electronic garbage in 2017. Given the country's high rates of population growth, rapid urbanization, high demand for electronic items, and end-of-life disposal, this amount is expected to rise even more in the future.

Nowadays, an increasing number of businesses are producing products that support an eco-friendly way of living. Environmental preservation is considered in the creation of everything from different accessories into cars to light bulbs and others. According to Barakagira & Paapa, (2023), that reducing pollution and its effects on environmental sustainability might be accomplished by applying initiatives such as the willingness to embrace green practices. Similarly, a study in green practices, in line with higher education institutions are the primary catalysts for societal change in green practices both on and off campus, green practices have emerged as a pressing issue that is essential for any university (Belhamri, 2022). According to Nandy (2022), sustainable design may help the economy and green technology even in the manufacturing sector. This is because sustainable design addresses waste and pollution in the production process, throughout the whole cycle that the benefits to the environment and the economy are taken into account. The increase in Municipal Solid Waste (MSW), stated by Khan (2022), highlights the urgent need for comprehensive policies to address waste generation and management for the environment protection and individual health, since the world is simultaneously growing more urbanized. As per Kumar's (2020) research, it is crucial to employ appropriate treatment and recycling techniques, taking into consideration the various composition of solid waste in India. The Municipality of Solid Waste Management (MSWM) in India has to cope with numerous challenges about Solid Waste Management (SWM). That in the waste management chain, trash segregation is crucial because it enables efficient reuse, recycling, and recovery (RRR) however, not much attention in developing nations (DC) (Kihila, et al., 2021). According to Kibria et al, (2023), that emphasizes the detrimental plastic pollution's environmental impact and examines the origins of plastic waste in both developed and developing nations. Based on the study of Goodwim (2023), A healthy, nutrient-dense diet may make a major difference to feeding the world's expanding population by reducing food loss and waste. Stated by Seelen, (2019), That it is imperative to educate the public on the dangers to water quality and sustainable personal water use in light of the anticipated increases in demand for high-quality fresh water. Baidoo, (2024). The management of household solid waste is a significant public health issue that is intimately linked to everyday life. People in the community can be very important in managing solid trash in homes Sultana (2021). In times of Pandemic Martin & Douglas (2022), claimed that the aftermath of the COVID-19 pandemic, in particular, environmental sustainability has gained a lot of attention as we saw the benefits of reducing travel and activity. Simultaneously, a great deal of pressure has grown on firms to not just conduct their business sustainably but also to go above and above the call of duty when it comes to their environmental initiatives. According to Rey-Merchan (2022), that sustainable mobility, highlighting carpooling as a solution that offers financial savings and environmental benefits by potentially reducing pollutants and urban congestion. An innovative on-demand transportation service called transportation sharing. (Mitropoulos & Ayfantopoulou, 2021). Based on the study of Mendoza (2019), emphasizes the importance of effective waste management, goal to reduce trash and promote recycling and reuse. It underscores that public behavior must change for these goals to be achieved, and education is key to driving this change. The text suggests that solid waste management solutions don't need to be overly complex or costly.

Ma et al. (2023), stated that youth eco-friendly lives and increased environmental understanding are directly influenced by environmental education. Green education fosters responsible consumption, waste reduction, water conservation, and energy efficiency, leading to active participation in sustainability initiatives and support for eco-friendly businesses, with a systemic approach essential for long-term sustainable

development. Aggarwal (2023). The study categorizes household food wasters into three groups: “green wasters” who are aware but still waste a lot, “red wasters” who are less aware but waste little, “blue wasters” both aware and effectively minimize waste, aligning with Sustainable Development Goal to reduce food waste. Amicarelli et al. (2021). In order to establish a sustainable lifestyle in the home, obstacles and contextual issues pertaining to the availability of green items must be addressed. Rather than being motivated by environmental concerns, economic considerations drive the majority of sustainable living habits and purchases made by households. The framework of household maintainable routine and ingesting has been developed to structure the complex relationships between consumption, taking into account contextual elements such as sustainable buying and obstacles to strengthening sustainable behavior based on the study of Zen (2020).

The research study is important to both the community and the individual since it helps them to support the environment in which they belong. The community and the person who engaged in environmentally friendly actions benefit from the research study. Researchers conclude that a municipality's degree of awareness and the sustainability of its green practices are significantly correlated. Thus, the current study aimed to determine the Municipality of Sta. Cruz's level of green practice awareness and sustainability.

METHODOLOGY

The researchers study focused on determining whether the implementation of green practices by the Municipality of Sta. Cruz in Laguna, Philippines sustain and people totally aware on it. The study aimed to determine the Municipality of Sta. Cruz's level of green practice awareness and sustainability Santa Cruz, Laguna: A respondent's viewpoints. Researchers collected both quantitative data from study participants through a questionnaire survey that created on green practices. The aim of the research served as the foundation for the question construction. There are two sections to the questionnaire. The respondent profile is covered in the first section. The second section focuses on the independent variables, which include the respondent's perspectives on the level of sustainability and awareness of green practices in municipalities. The questionnaire's primary objective was on the respondents' awareness of the application of green practices and their sustainability. A likert-type checklist with the alternatives strongly disagree, disagree, moderate agree, agree, and strongly agree is used to gauge the respondents' level of responses. Responses are tallied on a scale of 1 to 5 (strongly disagree, disagree, agree, disagree, agree, and strongly agree). Convenient sampling is used by the researchers. There is absolutely no pattern in how were getting the respondents or just who is at home.

RESULTS AND DISCUSSION

This section lists the various results, interpret and analyze the data collected in this study. The following tabular presentations and discussions will further characterize the green practices in the Municipality of Sta. Cruz, Laguna for sustainable development.

Profile of the Respondents		Frequency	%	Rank
Age	18 – 24	83	25%	2
	25 - 34	106	32%	1
	35 – 44	77	23%	3
	45 – 54	59	18%	4
	54 - 65	5	2%	5
Sex	Male	54	16%	2
	Female	276	84%	1

Income Level (Monthly)	10,000 and below	73	22%	3
	10,001 - 15,000	45	14%	5
	15,001 - 20,000	84	25%	1
	20,001 - 30,000	61	18%	4
	30,001 and above	67	20%	2
Occupation	Professional Workers	154	47%	2
	Technical Workers	176	53%	1
Educational Attainment	Grade School	29	9%	4
	High School	75	23%	2
	Bachelor's Degree	177	54%	1
	Vocational Education	32	10%	3
	Graduate Degree	17	5%	5
Volume of Waste (Daily)	.50 - 1 Kilos	259	78%	1
	1.50 - 2 kilos	53	16%	2
	2.50 kilos and above	18	5%	3

The Demographic profile of the respondents in terms of, ages “25 to 34 years old” yielded the highest frequency of one hundred and six (106) or 32.12% of the total population. This is followed by the ages “18 to 24 years old” with the frequency of eighty-three (83) or 25.15% of the total population. Next, the ages “54 to 65 years old” received the lowest frequency of five (5) or 1.52% of the total population. Tailed by Age were majority 25 to 34 years old during the time of the study. Next, in terms of Sex that “Female” yielded the highest frequency of two hundred and seventy-six (276) or 83.64% of the total population. On the other hand, the sex “Male” received the lowest frequency of fifty-four (54) or 16.36% of the total population. In terms of Sex were majority female during the time of the study. Next the income level “P15,001 to P20,000” yielded the highest frequency of eighty-four (84) or 25.45% of the total population. This is followed by the income level “P10,000 and below” with the frequency of seventy-three (73) or 22.12% of the total population. Furthermore, the income level “P10,001 to P15,000” received the lowest frequency of forty-five (45) or 13.64% of the total population. Additionally, in terms of Income Level were majority P15,001 to P20,000 during the time of the study. Followed by, the occupation “Technical workers” yielded the highest frequency of one hundred and seventy-six (176) or 53.33% of the total population. Next, the occupation “Professional workers” received the lowest frequency of one hundred and fifty-four (154) or 46.67% of the total population. With regards to Occupation were majority technical workers during the time of the study. Furthermore, on the education “Bachelor’s degree” yielded the highest frequency of one hundred and seventy-seven (177) or 53.64% of the total population. This is followed by the education “High School” with the frequency of seventy-five (75) or 22.73% of the total population. On the other hand, the education “Graduate degree” received the lowest frequency of seventeen (17) or 5.15% of the total population. From, Educational Attainment were majority Bachelor’s degree during the time of the study. In terms of Volume “0.50 to 1 kilo” yielded the highest frequency of two hundred and fifty-nine (259) or 78.48% of the total population. This is followed by the Volume “1.50 to 2 kilos” with the frequency of fifty-three (53) or 16.06% of the total population. On the other hand, the Volume “2.50 kilos and above” received the lowest frequency of eighteen (18) or 5.45% of the total population. And lastly, Volume of Waste were majority 0.50 to 1 kilo during the time of the study.

Table 1. Level of Awareness of the household as respondents to the green practices in Sta. Cruz, Laguna

STATEMENTS	MEAN	SD	REMARKS
1. Ensure that garbage is properly separated.	4.40	0.72	Highly Aware
2. Avoid plastic and advocate for reuse instead.	4.41	0.75	Highly Aware
3. Shop wisely and intentionally, and make sure to eat what you buy, to reduce food waste.	4.37	0.70	Highly Aware
4. Reduce Water Savings	4.40	0.68	Highly Aware
5. Cut back on energy conservation	4.29	0.74	Highly Aware
6. Utilize recycling in your home.	4.39	0.69	Highly Aware
7. Consistently recycle	4.33	0.75	Highly Aware
8. Carpool to work if possible.	3.81	0.98	Aware
Weighted Mean		4.30	
SD		0.34	
Verbal Interpretation		Very High	

Table 1 illustrates the level of Awareness of household as respondents to the green practices in Sta. Cruz, Laguna. From the statements above, “Avoid plastic and advocate for reuse instead” with the highest mean score ($M=4.41$, $SD=0.75$) and was stated as Highly Aware. However, the statement “Carpool to work if possible” received the lowest mean score of responses with ($M=3.81$, $SD=0.98$) yet was also remarked Aware.

The level of Awareness of the household as respondents to the green practices in Sta. Cruz, Laguna achieved a weighted mean score of 4.30 and a standard deviation of 0.34 and was Very High among the respondents.

Table 2. Level of Sustainability of the Green Practices in Sta. Cruz, Laguna as perceived by the respondents

STATEMENTS	MEAN	SD	REMARKS
1. Water and energy conservation are carefully controlled.	4.33	0.79	Highly Sustain
2. Frequently implement trash segregation into practice.	4.40	0.75	Highly Sustain
3. Encourage local government participation in all initiatives and programs involving green practices.	4.28	0.80	Highly Sustain
4. Buying local products nearby community.	4.21	0.87	Highly Sustain
5. Budgetary allocations for everyday green livelihood initiatives.	4.12	0.93	Sustain
6. Available in all social situations with responsiveness	4.25	0.81	Highly Sustain
7. Encourage people to adopt green practices.	4.39	0.77	Highly Sustain
8. Observed the municipality's rules and regulations on green practices.	4.14	0.82	Sustain
Weighted Mean		4.26	
SD		0.39	
Verbal Interpretation		Very High	

Table 2 demonstrates the level of Sustainability of the Green Practices in Sta. Cruz, Laguna as perceived by the respondents. From the statements above, “Frequently implement trash segregation into practice” got the highest mean score ($M=4.40$, $SD=0.75$) and was commented as Highly Sustain. The statement “Budgetary allocations for everyday green livelihood initiatives” received the lowest mean score of

responses with (M=4.12, SD=0.93) yet was also remarked Sustain.

The level of Sustainability of the Green Practices in Sta. Cruz, Laguna as perceived by the respondents reached a weighted mean score of 4.26 and a standard deviation of 0.39 and was Very High among the respondents.

Table 3. Composite table of the Green Practices in Sta. Cruz, Laguna as perceived by the respondents

INDICATORS	WM	SD	REMARKS
Awareness	4.30	0.34	Highly Aware
Sustainability	4.26	0.39	Highly Sustain
Overall Mean		4.28	
SD		0.36	
Verbal Interpretation		Very High	

Table 3 proves the composite table of Green Practices in Sta. Cruz, Laguna as perceived by the respondents. From the indicators above, “Awareness” got the highest weighted mean score (M=4.30, SD=0.34) and was remarked as Highly Aware. On the other hand, the indicator “Sustainability” received the lowest weighted mean score of responses with (M=4.26, SD=0.39) yet was also stated Highly Sustain. The level of Green Practices in Sta. Cruz, Laguna as perceived by the respondents attained an overall mean score of 4.28 and a standard deviation of 0.36 and was Very High among the respondents.

Table 4. Test of Difference Between the level of Awareness and Sustainability of the respondents in the Green Practices in Sta. Cruz, Laguna

Green Practices	Awareness		Sustainability		Mean Difference	95% Confidence Interval of Difference		t	df	Sig (2-tailed)
	M	SD	M	SD		L	U			
Curriculum Compacting	4.30	0.11	4.26	0.15	0.04	3.23	4.31	1.173	658	0.241

Legend: *Significant at 0.05

Shown in Table 4 is the test of difference on the levels of Awareness and Sustainability of respondents in the Green Practices in Sta. Cruz, Laguna. Data obtained through a paired t-test indicated that the increase in the scores is significant ($p < 0.05$). This implies that the awareness is better than sustainability. Findings also indicated that both awareness and sustainability are effective methods of Green Practices in Sta. Cruz, Laguna. From the findings above, we can infer that at 0.05 level of significance, the null hypothesis “There is no significant Difference Between the level of Awareness and Sustainability of the respondents in the Green Practices in Sta. Cruz, Laguna” is accepted which incites that there is no significant difference between them.

Table 5. Regression Analysis on the Profile and level of awareness of the respondents in the green practices in Sta. Cruz, Laguna

Awareness	B	SE	β	t	p
Constant	4.34	.155		28.061*	<.001
Age		.002	-.003	-1.408	.160

Sex	.060	.015	.243	.808
Income Level	.015	-.006	-.408	.684
Occupation	.043	.038	.872	.384
Educational Attainment	.020	-.035	-1.759	.080
Volume of Waste	.032	.030	.933	.351
R-squared		.020		
Adjusted R-squared		.002		
Standard Error of the Estimate	.392			
F(6, 323)			1.093	.366

*p < 0.05

The table 5 presents the results of a regression analysis examining the relationship between Awareness of the respondents in the green practices in Sta. Cruz, Laguna and Age, Sex, Income Level, Occupation, Educational Attainment and Volume of Waste. The regression model explains 2.0% of the variance in Awareness (R-squared = 0.020). All indicators have no significant relationship with Awareness. The F-test of the overall model is significant F (6, 323) = 1.093, p = .366, showing that the regression model is an effective match for the data. The standard error of the estimate is 3.92, reflecting the average deviation between observed and predicted Awareness. From the findings above, we can infer that at 0.05 level of significance, the null hypothesis “There is no significant relationship between the Profile and level of awareness of the respondents in the green practices in Sta. Cruz, Laguna” is accepted which incites that there is no significant relationship between them.

Table 6. Regression Analysis on the Profile and the level of sustainability of the respondents in the green practices in Sta. Cruz, Laguna

Sustainability	B	SE	β	t	p
Constant	4.600	.130		35.289*	<.001
Age		.002	-.006	-3.298*	.001
Sex		.0651	.101	-1.974*	.049
Income Level		.013	.007	.534	.594
Occupation		.037	-.001	-.036	.971
Educational Attainment		.017	-.008	-.494	.622
Volume of Waste		.027	.049	1.806	.072
R-squared			.057		
Adjusted R-squared			.039		
Standard Error of the Estimate	.331				
F(6, 323)				3.235	.004

*p < 0.05

The table 6 presents the results of a regression analysis examining the relationship between Sustainability of respondents in the green practices in Sta. Cruz, Laguna and Age, Sex, Income Level, Occupation, Educational Attainment and Volume of Waste. The regression model explains 5.7% of the variance in Sustainability (R-squared = 0.057). Both Age (β = -0.006, p = 0.001) and Sex (β = 0.101, p = 0.049) and has no significant relationship with Sustainability. The F-test of the overall model is significant F (6, 323) = 3.235, p = 0.004, demonstrating that the regression model is an excellent fit for the data. The standard error of the estimate is 3.31, reflecting the average deviation between observed and predicted Sustainability. From the findings above, we can infer that at 0.05 level of significance, the null hypothesis

“There is no significant relationship between the Profile and the level of sustainability of the respondents in the green practices in Sta. Cruz, Laguna” is accepted which inflames that there is no significant relationship between them.

CONCLUSIONS:

Researchers concluded that both awareness and sustainability at high levels among the respondents, with awareness slightly edging out sustainability in terms of effectiveness. Additionally, it finds that there is no significant correlation between the respondents' profiles and their level of sustainability in green practices. This suggests that demographic factors do not influence the success of sustainability efforts, and that both awareness and sustainability are independently important methods for promoting green practices.

RECOMMENDATION:

To uphold the sustainability that local governments and stakeholders have been urged to strengthen teamwork and team collaboration in order to increase sustainability on green practices, such as improving bike and pedestrian traffic, maintaining and improving parks, business correspondence in environmental compliance, the healthcare waste system, converting waste into resources through the making of product development, improving recycling and composting programs and other green practices issues. Additionally, these programs can support both the people's lives and green practices especially in this Municipality by using waste materials to improve livelihood efforts and a mindset of entrepreneurship.

REFERENCES:

- Aggarwal, Dr. D. (2023). Green Education for a Sustainable Future. *Journal of Environmental Impact and Management Policy*, (34), 27–30. <https://doi.org/10.55529/jeimp.34.27.30>
- Aishwarya, P., Divya M., Abinaya, K., Rajakrishnan, M. (2023). Consumer Awareness and Willingness towards Green Kitchen Practices -A Way through Sustainability Published/ publié in Res Militaris (resmilitaris.net), vol.13, n°3, March 2023, Spring.
- Amicarelli, V., Tricase, C., Spada, A., & Bux, C. (2021). Households' food waste behavior at local scale: A cluster analysis after the covid-19 lockdown. *Sustainability (Switzerland)*, 13(6). <https://doi.org/10.3390/su13063283>
- Baidoo, A.N.A., Danquah, J.A., Nunoo, E.K. et al. (2024). Households' energy conservation and efficiency awareness practices in the Cape Coast Metropolis of Ghana. *Discov Sustain* 5, 2 (2024). <https://doi.org/10.1007/s43621-023-00154-6>
- Barakagira, A., & Paapa, C. (2023). Green practices implementation for environmental sustainability by five-star hotels in Kampala, Uganda. *Environment, Development and Sustainability*. <https://doi.org/10.1007/s10668-023-03101-7>
- Barau, A. S. (2015). Perceptions and contributions of households towards sustainable urban green infrastructure in Malaysia. *Habitat International*, 47, 285-297. <https://doi.org/10.1016/j.habitatint.2015.02.003>
- Belhamri, K. (2022). The impact of green practices adoption on the reducing the costs. *International Journal of Economic Performance*, 5 (2).
- Environmental Management Bureau, Department of Environment and Natural Resources National Solid Waste Management Status Report [2008-2018]
- Goodwin, L. (2023). The Global Benefits of Reducing Food Loss and Waste, and How to Do It. <https://www.wri.org/insights/reducing-food-loss-and-food-waste>
- Knickmeyer, D. (2020). Social factors influencing household waste separation: A literature review on good practices to improve the recycling performance of urban areas, *Journal of Cleaner Production*,

Volume 245, 2020, 118605, ISSN 0959-6526,

Kumar, A., & Agrawal, A. (2020). Recent trends in solid waste management status, challenges, and potential for the future Indian cities – A review. *Current Research in Environmental Sustainability*, 2, 100011. <https://doi.org/10.1016/j.crsust.2020.100011>

Kibria, M.G., Masuk, N.I., & Safayet, R. (2023) Plastic Waste: Challenges and Opportunities to Mitigate Pollution and Effective Management. *Int J Environ Res* 17, 20 (2023). <https://doi.org/10.1007/s41742-023-00507-z>

Kihila, J. M., Wernsted, K., & Kaseva, M. (2021) Waste segregation and potential for recycling -A case study in Dar es Salaam City, Tanzania, *Sustainable Environment*, 7:1, DOI: 10.1080/27658511.2021.1935532

Loan, L.T.T, Takahashi, Y., Nomura, H., Yabe, M, (2019). Modeling home composting behavior toward sustainable municipal organic waste management at the source in developing countries, *Resources, Conservation and Recycling*, Volume 140, 2019, Pages 65-71, ISSN 0921-3449.

Ma, L., Shahbaz, P., Haq, S. ul, & Boz, I. (2023). Exploring the Moderating Role of Environmental Education in Promoting a Clean Environment. *Sustainability (Switzerland)*, 15(10). <https://doi.org/10.3390/su15108127>

Martin, E. & Douglas, J. (2022). Southeast Asia's recycling woes. <https://opinion.inquirer.net/154028/southeast-asias-recycling-woes>

Mendoza, W. J. (2019). Awareness and Responsiveness Level on Proper Waste Segregation at San Pedro Elementary School. <https://ojs.aaresearchindex.com/index.php/AJRMRA/article/view/5604>

Mitropoulos, L., Kortsari, A. & Ayfantopoulou, G. (2021). A systematic literature review of ride-sharing platforms, user factors and barriers. *Eur. Transp. Res. Rev.* 13, 61 (2021). <https://doi.org/10.1186/s12544-021-00522-1>

Miner KJ, Rampedi IT, Ifegbesan AP, Machete F. Survey on Household Awareness and Willingness to Participate in E-Waste Management in Jos, Plateau State, Nigeria. *Sustainability*. 2020; 12(3):1047. <https://doi.org/10.3390/su12031047>

Nanda, S., Berruti, F. (2021). Municipal solid waste management and landfilling technologies: a review. *Environ Chem Lett* 19, 1433–1456.

Nandy, S., Fortunato, E., & Martins, R. (2022). Green economy and waste management: An inevitable plan for materials science. *Progress in Natural Science: Materials International*, 32(1), 1-9. <https://doi.org/10.1016/j.pnsc.2022.01.001>

Pandey, U.R., Surjan, A., Kapshe, M., (2018). Exploring linkages between sustainable consumption and prevailing green practices in reuse and recycling of household waste: Case of Bhopal city in India, *Journal of Cleaner Production*, Volume 173, 2018, Pages 49-59, ISSN 0959-6526.

Rey-Merchán M. D.C., López-Arquillos A., Pires Rosa M. (2022). Carpooling Systems for Commuting among Teachers: An Expert Panel Analysis of Their Barriers and Incentives. *Int J Environ Res Public Health*. 2022 Jul 12;19(14):8533. doi: 10.3390/ijerph19148533. PMID: 35886385; PMCID: PMC9322048.

Seelen, L. M. S., Flaim, G., Jennings, E., & De Senerpont Domis, L. N. (2019). Saving water for the future: Public awareness of water usage and water quality. *Journal of Environmental Management*, 242, 246-257. <https://doi.org/10.1016/j.jenvman.2019.04.047>

Sultana, S. , Islam, M. , Jahan, F. and Khatun, F. (2021) Awareness and Practice on Household Solid Waste Management among the Community People. *Open Journal of Nursing*, 11, 349-366. doi: 10.4236/ojn.2021.115031.

Zen, I. S., Ebrahimi, M., Titisari, P. W., & Hendrayani, Y. (2020). Framing the Household Sustainable Consumption and Lifestyle in Malaysia: The Policy Implications. *International Journal of Psychosocial Rehabilitation*, 24(03), 840–854. <https://doi.org/10.37200/ijpr/v24i3/pr200837>

<https://www.greenjournal.co.uk/2019/12/the-importance-of-green-living-in-our-life-and-environment/>