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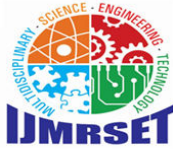
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Sustainability in the Food and Beverage Industry: A Comparative Study of Malaysia, India, and Indonesia

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ABSTRACT: Sustainability has risen to prominence as a central issue within F&B industry. Companies operating in this sector have increasingly come to appreciate the imperative of minimizing their environmental impact, championing social responsibility, and safeguarding their long-term economic sustainability. As sustainability continues to gain traction, it has become imperative to conduct an in-depth exploration of the existing body of research pertaining to sustainability in the F&B industry. This literature review aims to provide a comprehensive overview, shedding light on the key themes and insights that underpin sustainable practices in this dynamic and vital sector. With the global recognition of climate change and its attendant challenges, the F&B industry has found itself under scrutiny for its contributions to environmental degradation. Notably, this sector has been identified as a significant contributor to greenhouse gas emissions, deforestation, and water resource depletion. In response, F&B companies are increasingly acknowledging their role in these issues and are actively seeking ways to reduce their environmental footprint. This literature review will delve into the multifaceted approaches and strategies employed by F&B companies to mitigate their environmental impact.

I. INTRODUCTION

Over the past few decades, sustainability has risen to prominence as a critical concern in the food and beverage (F&B) industry. According to the Food and Agriculture Organization of the United Nations (FAO) in 2021, the global F&B industry is responsible for approximately 30% of all greenhouse gas emissions. This alarming statistic underscores the urgent need for sustainable practices in the industry to secure its longterm viability. These practices are essential not only for reducing the industry's environmental impact but also for preserving valuable resources and upholding principles of social responsibility. An important trend in the F&B sector is the widespread adoption of renewable energy sources, like solar power, to reduce the carbon footprint of production processes. Additionally, companies are investing in energy-efficient equipment to reduce their reliance on fossil fuels. Beyond the environmental benefits, these initiatives often lead to economic advantages through lower energy costs and an improved public image, demonstrating the company's dedication to sustainability (Yee et al., 2020).

Awareness and Knowledge

The importance of awareness and knowledge regarding sustainability practices is of utmost significance when it comes to maintaining sustainability in the food and beverage industry. A deep understanding of how business operations impact the environment, society, and the economy is essential for effectively managing sustainability efforts.

Empirical research consistently highlights the critical role of raising awareness among businesses as a fundamental step towards achieving sustainability goals. For instance, a study conducted by Gössling and Hall (2021) revealed that increased awareness of sustainability issues led to a substantial uptick in the adoption of sustainable practices within the food and beverage industry.

Furthermore, knowledge plays an equally vital role in the successful execution of sustainable practices. Research carried out by Rodriguez and associates in 2019 stressed the importance of sharing knowledge among various stakeholders in the industry to nurture and advance sustainability initiatives. This underscores the interconnection between knowledge and taking action when it comes to sustainability. Nonetheless, despite the growing recognition of



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sustainability, significant challenges persist within the industry. One such challenge is the inherent complexity of sustainability itself, which encompasses numerous interconnected facets. Grasping and effectively

Attitude

Attitudes toward sustainability within the F&B industry play a pivotal role in guiding decision-making processes and influencing behaviors towards adopting sustainable practices. Extensive research has consistently demonstrated that individuals and organizations with positive attitudes towards sustainability are more inclined to embrace and implement sustainable practices within the industry, as exemplified by a study conducted by Paillé, Chen, Boiral, and Jin in 2014. These attitudes are molded by a multitude of factors, including individual values, the prevailing organizational culture, and external influences. For instance, research carried out by Vermeir and Verbeke in 2006 has illuminated the profound impact of personal values on consumers' attitudes regarding sustainable food choices. Individual values serve as a compass, steering consumers, and industry professionals alike towards sustainability as they align their personal beliefs with actions that promote ecological, social, and economic well-being (Laksmidewi, 2022).

Environmental sustainability is a significant concern for the food and beverage sector. Research by Vermeulen, Campbell, and Ingram (2012) and Poore and Nemecek (2018) highlight the industry's significant impact on water consumption, land degradation, greenhouse gas emissions, and biodiversity loss. Studies emphasize the need for sustainable sourcing practices, reducing waste, adopting renewable energy sources, and implementing efficient supply chain management to mitigate environmental impacts. Secondly, responsible sourcing and supply chain management are also essential to the sustainability of the food and beverage industry. Studies by Seuring and Müller (2008) highlights the need for transparent and ethical supply chains, including fair trade practices, responsible procurement, and traceability of ingredients. Collaboration among stakeholders, such as farmers, suppliers, and retailers, ensures sustainable sourcing, reduces negative social and environmental impacts, and promotes practices contributing to the planet's long-term well-being.

Sustainability Practices

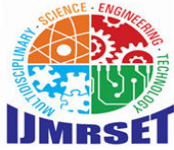
Implementing sustainable practices in the food and beverage industry's supply chain is essential for maintaining sustainability. This involves responsible sourcing of ingredients, reducing emissions from transportation, and promoting ethical labor practices. Research conducted by González-Torre and Coque in 2016 emphasized the significance of sustainable supply chain management in the agri-food sector. Additionally, effective waste management and recycling practices play a crucial role in sustaining the food and beverage industry's environmental responsibilities. Reducing food waste, encouraging composting, recycling, and minimizing packaging waste can substantially mitigate environmental impacts. A study by Lorenz and Langen in 2017 underscored the importance of waste reduction strategies within the food sector.

Efforts to conserve energy and water resources are also vital for upholding sustainability in the food and beverage industry. This entails optimizing energy consumption, investing in energy-efficient technologies, and implementing water-saving practices. Research conducted by Kini, Shenoy, and Subramaniam in 2017 highlighted the significance of energy and water management practices in the food sector. Furthermore, adopting sustainable packaging practices is a critical component of sustainability in the food and beverage industry. This includes the use of eco-friendly materials, reduction of packaging waste, and the promotion of recyclability. A study by Ong, Kaur, Pensupa, Uisan, and Lin in 2018 emphasized the importance of sustainable packaging development in the food processing industry.

II. RESEARCH METHOD

Sample and Procedure

Data and information regarding the research topic "Sustainability in the Food and Beverage Industry: A Comparative Study of Malaysia, India, and Indonesia" were gathered via an online questionnaire administered through Google Forms. The survey was meticulously crafted and disseminated across various social media platforms such as WhatsApp, Telegram, Instagram, and Facebook, with the intention of collecting insights from participants. The survey methodology employed a straightforward random sampling approach, with the aim of securing responses from 150 individuals representing Malaysia, India, and Indonesia. Participants were requested to express their viewpoints using a 5-point Likert scale, spanning from 1 (Strongly Disagree) to 5 (Strongly Agree).



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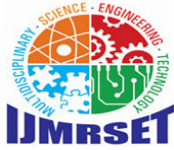
This internet-based survey encompassed six distinct sections, denoted as Sections A through F. Section A centered on capturing demographic information from the respondents, encompassing variables such as gender, age, country of residence, educational background, employment status, and annual income. Section B focused on assessing respondents' knowledge and awareness of sustainability practices, featuring five items designed to gauge their understanding and awareness of sustainable practices and their importance. For example, one item in this section assessed whether respondents were conscious of the environmental and social impacts of food and beverage production and consumption.

sustainability practices in the F&B industry and featured three items measuring respondents' agreement levels regarding the roles of various stakeholders in promoting sustainable practices, such as government policies and regulations. This research also incorporated secondary data from academic journals, papers, and online sources to complement the survey findings.

selected — Malaysia, India, and Indonesia — accounted for 33.3% of the respondent's nationality from each country. The average responder had a bachelor's degree, making up 74.7% of the total respondents. Majority of respondents (66.7%) are jobless since the author considered students as being under the “unemployed” employment group, and

Table 1. Summary of Respondent’s Demography (N=150)

	Frequency	Percentage (%)
Gender		
Male	92	61.3
Female	58	38.7
Age		
18 - 24 years old	130	86.7
25 - 34 years old	12	8
35 - 44 years old	6	4
45 - 54 years old	2	1.3
55 years old and above	0	0
Country		
Malaysia	50	33.3
India	50	33.3
Indonesia	50	33.3
Education Level		
High school diploma or equivalent	19	12.7
Bachelor’s degree	112	74.7



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Master’s degree	19	12.7
Doctorate degree	0	0
Employment Status		
Full time	33	22
Part time	8	5.3
Self-employed	9	6
Unemployed	100	66.7
Annual Income		
Less than RM25,000	116	77.3
RM25,000 - RM50,000	9	6
RM50,001 - RM100,000	10	6.7
RM100,001 - RM150,000	9	6
RM150,001 - RM200,000	4	2.7
RM200,001 or more	2	1.3

A five-point Likert scale was used to classify each item in Table 2. The results indicate that respondents are neither in agreement with nor opposed to the idea that Malaysia, India, and Indonesia are doing a good job of promoting sustainable practices in the food and beverage industry. This may be considering the respondents were unfamiliar with or were unaware concerning how well all three countries have promoted sustainable practices in their own nations. However, compared to India and Indonesia, where fewer than a quarter of respondents agreed, Malaysia is doing a great job of promoting sustainable practices in the F&B industry, according to a quarter of the respondents. Majority of respondents were neutral—that is, neither in agreement nor disagreement— about whether Malaysia's F&B sector sustainability procedures were more advanced than those in India and Indonesia. Majority of respondents, however, strongly agree that more needs to be done to encourage sustainable practices in the Malaysia, India, and Indonesia food and beverage industries. This result allows us to evaluate and compare how sustainable practices are being implemented in the F&B industry in Malaysia, India, and Indonesia based on knowledge and awareness, attitude, and other factors. The knowledge and awareness, attitude, other factors, and sustainable practices Cronbach's coefficients alpha were 0.701, 0.887, 0.897, and 0.753, respectively.

Table 2. Cross-Tabulation between Country and Dependent Variable (Section D:

Sustainability practices in F&B industry in Malaysia, India, and Indonesia) for Comparative Analysis

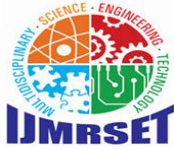
Malaysia is doing a good job in promoting sustainable practices in the F&B industry.							
		1	2	3	4	5	Total
Country	Malaysia	1	8	13	17	11	50



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	India	2	1	27	16	4	50
	Indonesia	0	4	20	23	3	50
Total		3	13	60	56	18	150
India is doing a good job in promoting sustainable practices in the F&B industry.							
Country	Malaysia	4	5	24	12	5	50
	India	1	4	30	10	5	50
	Indonesia	1	6	24	18	1	50
Total		6	15	78	40	11	150
Indonesia is doing a good job in promoting sustainable practices in the F&B industry.							
	Malaysia	2	7	26	10	5	50
Country	India	1	3	30	14	2	50
	Indonesia	1	4	19	23	3	50
Total		4	14	75	47	10	150
I believe that sustainability practices in the food and beverage industry are more advanced in Malaysia than in India and Indonesia.							
	Malaysia	0	2	15	22	11	50
Country	India	1	2	21	12	14	50
	Indonesia	1	1	24	18	6	50
Total		2	5	60	52	31	150
I believe that the food and beverage industry in Malaysia, India, and Indonesia should do more to promote sustainable practices.							
	Malaysia	0	1	11	18	20	50
Country	India	0	1	8	14	27	50
	Indonesia	0	2	10	13	25	50
Total		0	4	29	45	72	150



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Table 3. Descriptive Statistics, Cronbach’s Coefficients Alpha, and Zero-order Correlations for All Study Variables

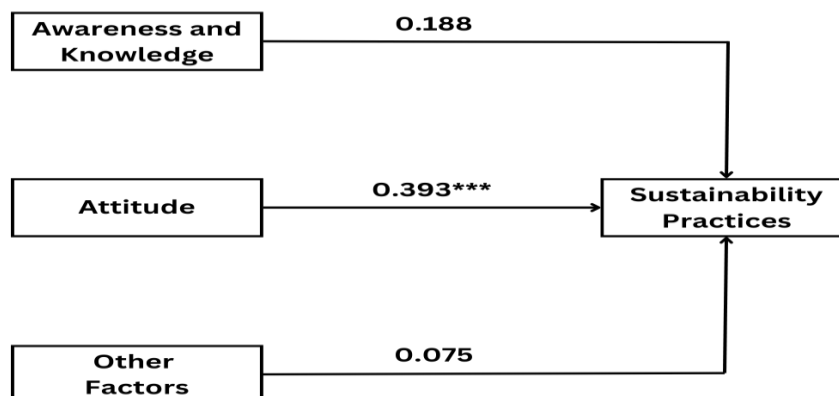
Variables	1	2	3	4
Knowledge and Awareness	0.701			
Attitude	0.606**	0.887		
Other Factors	0.444**	0.711**	0.897	
Sustainability Practices	0.460*	0.561**	0.438**	0.753
Number of items	5	5	3	5
Mean	18.42	20.45	17.95	13.05
Standard Deviation	4.34	3.78	3.07	2.33

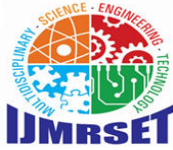
Note: N = 150; *p < 0.05, **p < 0.01, ***p < 0.001. The diagonal entries represent Cronbach’s coefficient alpha.

Table 3 shows zero-order correlations between variables, descriptive statistics, and reliability data. The Cronbach’s Alpha value, which was used to assess internal consistency reliability of all the variables, shows that all four of the investigated variables have internal consistency reliability that ranges between 0.70 and 0.90. The knowledge and awareness of sustainability practices, attitudes toward sustainability in the F&B industry, and other factors influencing sustainability practices in the F&B industry are the three variables that affect sustainability practices in the F&B industry in Malaysia, India, and Indonesia.

As shown in Table 4, the independent variable will be knowledge and awareness of sustainability practices, attitudes toward sustainability in the F&B industry, and other factors influencing sustainability practices in the F&B industry. The dependent variable will be sustainability practices in the F&B industry in Malaysia, India, and Indonesia. The generated hypotheses were evaluated using regression analysis. The results showed a favorable relationship between behavioral intention and attitudes toward sustainability in the F&B business. Thus, H2 are proven. The R2 value was 0.340, which indicates that the attitude toward sustainability in the F&B industry account for 34% of the variance in sustainability practices. The dependent variable was most significantly impacted by attitudes toward sustainability in the F&B industry, which had a beta value of 0.393. On the other hand, knowledge and awareness of sustainability practices and other factors towards sustainability practices have an insignificant impact on the industry of food and beverage sustainability practices. H1 and H3 are thus not supported.

Figure 1. Hypnotized Model





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III. DISCUSSION

This research investigated the determinants affecting the uptake of sustainability measures in the food and beverage sectors of Malaysia, India, and Indonesia, aligning with the global emphasis on sustainability. The study findings reveal that among the three variables examined, namely attitudes towards sustainability in the F&B industry, one of them significantly influences the implementation of sustainability practices in these countries' F&B industries.

Consumer perspectives regarding sustainability practices play a pivotal role in propelling the adoption of such practices within the food and beverage (F&B) sectors of Malaysia,

IV. CONCLUSION

The sustainability practices in the food and beverage (F&B) industry between Malaysia, India, and Indonesia is crucial due to the growing environmental, social, and economic impact in recent years. To conclude, this study examines different countries' sustainability practices based on 3 key variables which are consumers' awareness and knowledge, In addition to exploring sustainability in the F&B industry, the respondents also provided insights into potential approaches and responses. The implications of sustainability within the food and beverage industry are profound and can exert broad-ranging effects on the environment, economy, and society. A comparative analysis involving Malaysia, India, and Indonesia can offer valuable insights into the particular challenges and opportunities that each country encounters when striving to implement sustainable practices in this industry.

REFERENCES

1. Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: A review. *British Food Journal*, 111(10), 1140–1167. doi:10.1108/00070700910992961
2. Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26(3), 197–218. doi:10.1002/smj.441
3. Brammer, S., & Walker, H. (2011). Sustainable procurement in the public sector: An international comparative study. *International Journal of Operations & Production Management*, 31(4), 452-476. doi:10.1108/01443571111119551
4. Bui, T.-D., Aminah, H., Wang, C.-H., Tseng, M.-L., Iranmanesh, M., & Lim, M. K. (2022). Developing a food and beverage corporate sustainability performance structure in Indonesia: Enhancing the leadership role and tenet value from an ethical perspective. *Sustainability* 2022, 14(6). doi:10.3390/su14063658
5. Chen, C.-C., Sujanto, R. Y., Bui, T.-D., & Tseng, M.-L. (2022). Sustainable recyclate packaging in Indonesian food and beverage industry: A hybrid decision-making analysis in consumption stages. *Quality & Quantity*, 57, 2053-2089. doi:10.1007/s11135-022-01458-x



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