

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

Daisy Mui Hung Kee¹, Jerome Vui Khiong Lee², Izza Yasmin Adriana Binti Azlan³,
Jeevasriirubini A/P Subramaniam⁴, Jocelyn Chia Wen Koay⁵, Ayu Melissa Putri⁶,
Ritanshi Asthana⁷, Kshitiz Shrivastava⁸, Ashiza Beg⁹

Universiti Sains Malaysia^{1, 2, 3, 4, 5}

Universitas Brawijaya, Indonesia⁶

Prestige Institute of Management, India^{7, 8, 9}

Correspondence Email: jromelee00@student.usm.my

ARTICLE INFORMATION

Publication information

Research article

HOW TO CITE

Kee, D. M. H., Lee, J. V. K., Azlan, I. Y. A. B., Subramaniam, J., Koay, J. C. W., Putri, A. M., Asthana, R., Shrivastava, K., Beg, A. (2023). Sustainability in the Food and Beverage Industry: A Comparative Study of Malaysia, India, and Indonesia. *International Journal of Tourism and Hospitality in Asia Pacific*, 6(3), 1-17.

DOI:

<https://doi.org/10.32535/ijthap.v6i3.2591>

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Received: 19 August 2023

Accepted: 20 September 2023

Published: 20 October 2023

ABSTRACT

This study presents a comparative study on sustainability practices in the food and beverage (F&B) industry of three Southeast Asian countries: Malaysia, India, and Indonesia. Sustainability in the F&B industry of a country has gained wide concern due to the growing environmental, social, and economic impact. This study aims to examine whether the consumers' awareness and knowledge and consumers' attitudes will influence the sustainability practices implemented by three different countries as well as to compare the sustainable practices in the F&B industry across countries. Data was collected through a Google Forms survey with a sample size of 150 respondents. This paper will also study the other factors contributing to the implementation of sustainability practices in Malaysia, India, and Indonesia. The findings of this study revealed that the consumers' awareness and knowledge, attitude and other factors contributing to sustainability are collectively mediated by the implementation and promotion of sustainable practices in the F&B industry. However, adopting sustainable practices varies across countries due to the complex relationship of those variables.

Keywords: Consumers' Attitudes, Consumers' Awareness and Knowledge, Food and Beverage Industry, Sustainability Practice

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 long-term 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).

According to research by ESG consultants of EcoVadis in 2021, the F&B industry has an overall sustainability score of 48.9. This places it slightly behind the Construction sector (49.4) and the Finance, Legal, and Consulting sector (51.0). It is worth noting that the F&B industry excels in addressing environmental concerns and has significantly enhanced its ethical standing. These sustainability efforts align closely with the goals of the United Nations' Sustainable Development Goals (SDGs), particularly SDG 3 (Ensuring Healthy Lives and Promoting Well-being for All at All Ages) and SDG 12 (Ensuring Sustainable Consumption and Production Patterns). SDG 3 emphasizes the importance of the well-being of humans, animals, plants, and the environment, underscoring the necessity of sustainable food production. In contrast, SDG 12 highlights the critical role of fostering sustainable production, reducing food losses, and curbing waste. Business leaders in the F&B sector are increasingly recognizing the importance of environmental sustainability. A significant 55% of F&B industry leaders express a heightened commitment to investing in environmental sustainability. Companies are directing their research and development efforts toward agricultural technology solutions to create more sustainable processes and products, aligning with the broader global shift toward sustainable agriculture.

One of the primary drivers of change is the growing consumer awareness and demand for sustainability in the F&B industry. Consumers are becoming more conscious of sustainability practices and are adjusting their purchasing behavior accordingly. They consider how products meet their needs while also evaluating their broader impact on the environment and society. Through the implementation of sustainable practices, companies can gain a competitive advantage and increase sales by offering products with a clear sustainability distinction. Despite these positive strides, there are areas where the F&B industry still needs to make significant improvements. Governments, stakeholders, investors, and consumers are collectively pressuring companies to expedite their sustainability transformations. This concerted effort is crucial for driving meaningful change across the industry. Existing research consistently emphasizes the pivotal role of sustainability in enhancing the long-term environmental, social, and economic performance of the F&B industry, as highlighted by Bui et al. in 2022. Notably, the global organic food market is projected to experience substantial growth, with estimated revenues expected to reach \$484.0 billion from 2022 to 2030, a significant increase from \$168.5 billion in 2021, indicating a healthy Compound Annual Growth Rate (CAGR) of 11.77%, according to Research Dive in 2022.

It is important to acknowledge that not all countries' F&B industries increased their sustainability investments, particularly during the height of the global pandemic. Given the multifaceted nature of these dynamics, this research aims to gather insights from the public. Specifically, the researchers seek to evaluate and compare sustainable practices within the F&B industry across three diverse countries: Malaysia, India, and Indonesia. This study will investigate the impact of various factors, including consumer awareness, attitudes, government policies, social media, and consumer demand, on the implementation of sustainable practices. Ultimately, this research aims to contribute to a deeper understanding of the factors influencing sustainability in the F&B sector and the unique challenges and opportunities that different countries face within this dynamic industry.

LITERATURE REVIEW

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.

Moreover, the concept of social responsibility has gained immense traction within the F&B industry. Stakeholders, including consumers, investors, and regulatory bodies, are demanding greater transparency and accountability from F&B companies in areas such as labor practices, ethical sourcing, and community engagement. Consequently, this review will explore how F&B companies are integrating social responsibility into their operations, supply chains, and corporate cultures, highlighting the significance of responsible business practices. Additionally, the sustainability agenda in the F&B sector extends beyond ethical considerations to encompass economic viability. Companies are recognizing that embracing sustainability is not merely a matter of conscience but is also intrinsically tied to their long-term financial success. The literature review will examine how sustainability initiatives can yield cost savings, enhance brand reputation, and drive innovation, all of which contribute to economic sustainability.

As this review synthesizes existing research, it will underscore the critical role of sustainability in shaping the F&B industry's future. Sustainability is no longer viewed as a niche concern but as a fundamental pillar that underpins the industry's ability to thrive in an increasingly complex and interconnected global landscape.

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 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 prioritizing these multifaceted aspects can be a formidable undertaking for businesses, as observed by Bansal in 2005. The intricate nature of sustainability necessitates a comprehensive approach that takes into account its environmental, social, and economic dimensions.

Additionally, the implementation of sustainable practices often entails significant financial investments. Businesses are required to allocate resources towards acquiring sustainable technologies, providing employee training, and enhancing infrastructure. This financial constraint poses a substantial hurdle, particularly for small and medium-sized enterprises (SMEs) operating within the industry, as highlighted by Russo and Fouts in 1997. SMEs often face resource limitations that can hinder their ability to adopt and integrate sustainability practices effectively. To overcome these challenges and augment awareness and knowledge within the food and beverage industry, businesses can employ a range of strategies. One effective approach is to establish and provide employee training programs focused on sustainability issues. These programs not only raise awareness but also equip the workforce with the knowledge and skills needed to actively contribute to sustainability efforts.

Furthermore, collaboration with other businesses and organizations is a valuable avenue for knowledge exchange and capacity building. By sharing knowledge and best practices, businesses can accelerate their sustainability initiatives and promote collective learning, as indicated by Linnenluecke and Griffiths in 2010. Collaborative efforts can help businesses navigate the complex landscape of sustainability more effectively. Government involvement also plays a pivotal role in enhancing awareness and knowledge within the industry. Governments can incentivize sustainability practices through financial mechanisms and regulatory frameworks, encouraging businesses to proactively engage in sustainable endeavors. Research by Brammer and Walker in 2011 suggests that government interventions, such as subsidies and environmental regulations, can serve as catalysts for raising awareness and driving knowledge dissemination in the pursuit of sustainability goals.

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).

Furthermore, organizational culture within F&B businesses has emerged as a significant factor in shaping attitudes and behaviors towards sustainability. A study by Linnenluecke and Griffiths in 2010 underscored the influential role of a supportive organizational culture in cultivating positive attitudes towards sustainability. When businesses foster a culture that values and prioritizes sustainability, employees are more likely to develop favorable attitudes and, subsequently, engage in practices that contribute to sustainability goals. Beyond the confines of individual values and organizational culture, external influences exert considerable sway over attitudes within the F&B industry. Media coverage and public discourse on sustainability-related issues, for instance, can significantly impact how industry stakeholders perceive and respond to sustainability challenges. Research by Verain, Sijtsema, Davegos, and Antonides in 2017 demonstrated that exposure to sustainability-related topics in the media can foster positive attitudes and intentions among consumers to support sustainable food and beverage businesses.

In light of these findings, it is imperative for F&B businesses to actively cultivate and nurture positive attitudes toward sustainability among their employees. One effective approach, as highlighted by research from De Roeck and Maon in 2018, is to incorporate sustainability into employee training and development programs. By integrating sustainability principles into training initiatives, businesses can not only impart essential knowledge but also shape attitudes, ultimately promoting a culture of sustainability within the industry.

Other Factors

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.

Social responsibility and consumer engagement significantly promote food and beverage sector sustainability. Studies by Verain, Sijtsema, Davegos, and Antonides (2017) and Sehgal et al. (2020) highlight the importance of corporate social responsibility initiatives, ethical labour practices, community engagement, and consumer education. Engaging consumers through sustainable product labelling, transparent information sharing, and responsible marketing practices can drive demand for sustainable food choices and foster positive societal change. Not only that, minimizing food waste and promoting a circular economy are key sustainability considerations in the food and beverage industry. Research by Parfitt et al. (2010) emphasizes efficient production and distribution systems, innovative packaging solutions, and effective waste management practices. Adopting food waste prevention, surplus redistribution, and recycling strategies can reduce environmental burdens and create a more sustainable food system.

While environmental and social aspects have received significant attention, this literature review focuses on the economic sustainability factors in the food and beverage sector. This review aims to provide insights into the economic implications of sustainable practices, their impact on business performance, and the role of economic factors in driving sustainability in this industry. Firstly, according to Niero and Rivera (2018), sustainable production practices in the food and beverage industry can lead to cost savings through resource optimization, such as energy and water usage reduction. For example, adopting energy-saving technologies, such as advanced refrigeration systems or process optimization, can significantly reduce operational costs and improve overall profitability. Next, certifications, such as organic, fair trade, and sustainable sourcing, provide credibility and value differentiation in the marketplace. Studies indicate that obtaining relevant certifications impacts business performance, increasing market share and allowing businesses to command premium prices. Aertsens, Verbeke, Mondelaers, and Huylenbroeck (2009) state that certifications, such as organic or sustainable sourcing, positively impact consumer perception, allowing businesses to differentiate their products and command premium prices.

Sustainability Practices

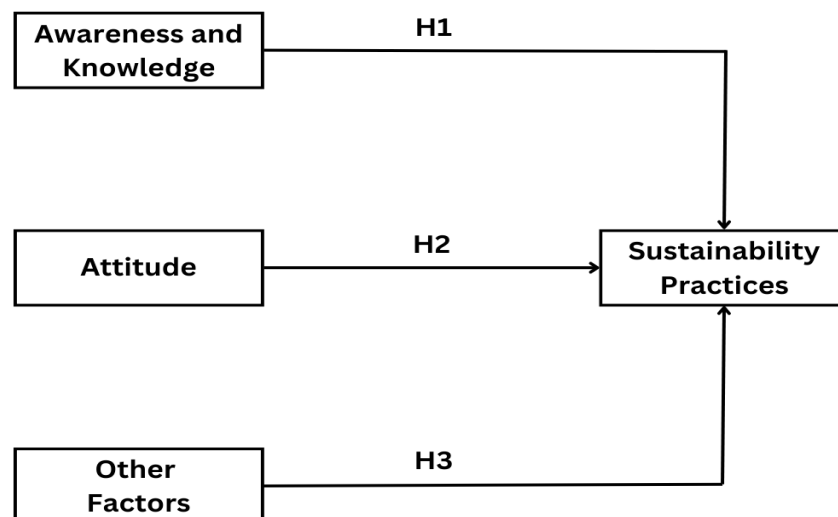
Implementing sustainable practices in the food and beverage industry's supply chain is essential for maintaining sustainability. This involves responsible sourcing of ingredients, reducing emissions from transportation, and promoting ethical labor practices. Research conducted by González-Torre and Coque 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.

The research by Chen, Sujanto, Bui, and Tseng (2022) explores the utilization of sustainable recycled packaging in the Indonesian food and beverage sector. It employs a hybrid decision-making analysis to evaluate various consumption stages, including production, distribution, retail, and post-consumption. The article starts by underlining the growing importance of sustainable packaging practices and defines the concepts of sustainable packaging and the use of recyclate materials. It highlights the environmental benefits of sustainable recycle packaging, including waste reduction and resource conservation.

In summary, this review of literature and the examined studies provide valuable insights into the diverse aspects of sustainability in the food and beverage industry. It emphasizes the necessity for holistic approaches that encompass environmental, social, and economic dimensions to drive sustainable practices and cultivate a more resilient and socially responsible food system. Figure 1 illustrates our research model, and we have formulated three hypotheses as follows:

Figure 1. Research Model



H1: Awareness and knowledge are significantly related to the sustainability practices in the food and beverage industry.

H2: Attitude is significantly related to sustainability practices in the food and beverage industry.

H3: Other factors, including environmental, social, and economic, are significantly related to sustainability practices in the food and beverage industry.

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).

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.

Section C delved into respondents' attitudes towards sustainability in the food and beverage industry, presenting five items to measure their agreement levels regarding the environmental, social, and economic impact of the industry. An example statement in this section gauged respondents' concern about the economic impact of the food and beverage industry. Section D explored the comparative aspect of sustainability practices in the food and beverage industry across Malaysia, India, and Indonesia. It included five items designed to assess respondents' agreement levels regarding the promotion of sustainable practices in these countries' F&B industries. For instance, one item assessed whether respondents believed that the food and beverage industry in these countries should do more to promote sustainability. Section E addressed other factors influencing 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.

Measures

The researchers evaluated a total of 24 statements, including expressions like "The environmental impact of the food and beverage industry is a concern for me", "The social impact of the food and beverage industry is a concern for me", "The economic impact of the food and beverage industry is a concern for me". Additionally, the researchers assessed perceptions such as "In my opinion, Malaysia is doing a good job in promoting sustainable practices in the food and beverage industry", "In my opinion, India is doing a good job in promoting sustainable practices in the food and beverage industry", "In my opinion, Indonesia is doing a good job in promoting sustainable practices in the food and beverage industry". These evaluations aimed to examine consumers' attitudes, behaviors, knowledge, and awareness regarding sustainability practices in the various countries under investigation. All of these statements were structured using a questionnaire format with a 5-point Likert scale, ranging from one (Strongly disagree) to five (Strongly agree). In this analysis, the sustainability practices are the dependent variable while the consumers' awareness and knowledge, consumers' attitudes and other factors are the independent variables.

RESULTS

Over half of the respondents (86.7%) were between the ages of 18 and 24. Women made up majority of respondents (86.7%). The three ASEAN nations that were 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 77.3% reported having an annual income of less than RM25,000. The demographics of the summarized respondents are shown in Table 1.

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
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
	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.							
Country	Malaysia	2	7	26	10	5	50
	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.							
Country	Malaysia	0	2	15	22	11	50
	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.							
Country	Malaysia	0	1	11	18	20	50
	India	0	1	8	14	27	50
	Indonesia	0	2	10	13	25	50
Total		0	4	29	45	72	150

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.

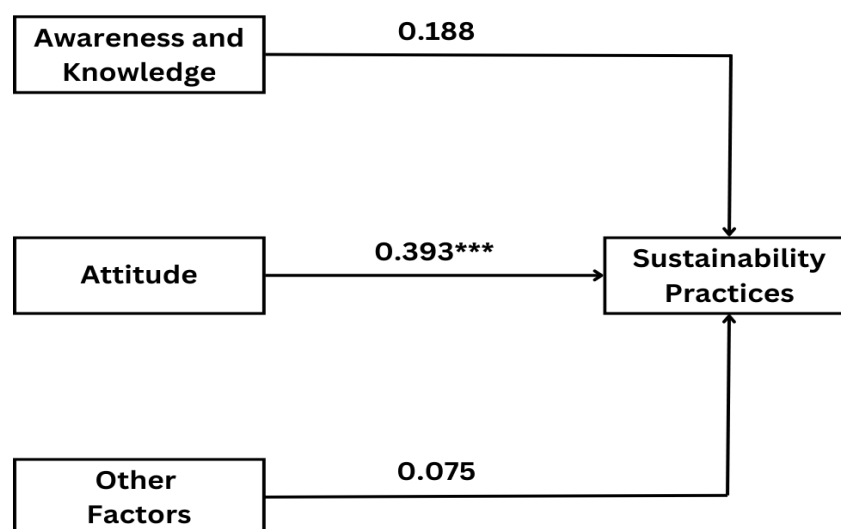
Table 4. Regression Analysis

Sustainability Practices in the F&B industry in Malaysia, India, and Indonesia (R ² Change = 0.340)	Beta
Knowledge and Awareness	0.188
Attitude	0.393***
Other Factors	0.075

Note: N=100; *p < 0.05, **p < 0.01, ***p < 0.001.

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 2. Hypnotized Model



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, India, and Indonesia. Consumer viewpoints concerning sustainability and organic products have a positive impact on their inclination to purchase such items. Consumers who hold favorable attitudes toward sustainability are more inclined to support sustainable practices within the F&B industry (Hughner, McDonagh, Prothero, Shultz, & Stanton, 2007). They seek and prefer products that are environmentally friendly and socially responsible. These attitudes influence their decision to support sustainable practices in the F&B industry (Grunert, Hieke, & Wills, 2014). The industry's decision to adopt and implement sustainability initiatives is directly influenced by consumers' attitudes as they become more aware of environmental issues and the significance of sustainable practices. Customers also create a demand for sustainable goods and services by actively supporting them, which forces businesses to alter their methods. People are increasingly looking for goods and services that align with their values, particularly those that are related to social responsibility and protecting the environment. Thus, F&B organizations are perceiving the need to integrate sustainability practices into their tasks to draw in and hold clients. consumer attitudes towards sustainability significantly impact their willingness to pay for eco-labeled products. Consumers who value sustainability are more likely to create demand for sustainable goods and services.

Aligning with consumer preferences and fulfilling their expectations for environmentally friendly practices can significantly benefit the F&B industry. By embracing sustainability initiatives, companies can enhance their brand image, attract more consumers, and ultimately expand their market share. When companies engage in socially responsible

practices, including environmental initiatives, consumers develop a positive perception of the brand (Sen and Bhattacharya, 2001). Businesses in the food and beverage industry are seen as socially and environmentally conscious when they support fair trade, cut down on waste, or reduce carbon emissions. Customers are drawn to and trust this positive brand image, which results in increased customer loyalty and result in repeat business. They can make profit from the expanding market of environmentally conscious customers who place a high value on sustainability when making purchases. consumers have positive attitudes towards fast food chains that engage in environmentally friendly practices, such as using sustainable packaging or supporting local farmers. These practices enhance the brand image and can attract more consumers to the F&B industry. Not only that, consumer attitudes towards sustainability significantly influence their willingness to pay a premium for sustainable products. Products and services that are environmentally friendly, ethically sourced, and supportive of local communities command a premium price from them. In order to remain competitive and satisfy customer demands, food and beverage businesses are realizing the importance of incorporating sustainability into their business models. Businesses can use consumer attitudes and preferences as useful indicators to develop sustainable products that appeal to their intended customers.

Moreover, governments all over the planet are progressively perceiving the significance of maintainable practices in the F&B industry. As buyers' mentality keeps on moving towards sustainability, governments are turning out to be more disposed to layout guidelines that both energize and authorize these practices. Government regulations and policies can play a crucial role in shaping CSR practices, including sustainability initiatives. Governments assume a pivotal part in driving changes, as they have the ability to shape strategies that incentivize organizations to carry on sustainable practices. Additionally, by upholding guidelines and checking consistency, governments can guarantee that the F&B business works in a naturally and socially responsible manner. As consumers increasingly demand transparency and accountability from businesses, governments are stepping up to create an enabling environment for sustainable practices in the F&B industry. Public pressure and societal expectations, driven by consumer attitudes towards sustainability, influence government actions in enforcing environmental regulations.

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, consumers' attitudes, and other factors. Our research is to make a deeper study on sustainability and how it is affecting the food and beverages industry of Malaysia, India, and Indonesia. This study finds out that the consumers' attitudes will strongly influence sustainable practices in the F&B industry across countries. When the consumers' awareness and knowledge of sustainable practices like eco-friendly packaging, organic farming or carbon footprint raises, the demand for sustainable products will rise as the consumers' purchasing preferences have shifted to support more organic food options. Consumers with positive attitudes towards sustainability prefer to support F&B companies that align with their values in adopting eco-friendly practices. Moreover, this study allows the scholars to understand other factors contributing to the implementation of sustainability practices across countries, that are government policies and regulations, social media, and consumer demand. These factors play a significant role to drive the overall sustainability in the F&B industry positively, together with encouraging all F&B companies and consumers to adhere to sustainable practices.

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.

Drawing from this research findings from respondents, the researchers have identified key strategies to discern which ones hold the most promise. For instance, participants expressed a willingness to pay a premium for food and beverage products produced in an environmentally responsible manner, reflecting a heightened awareness of environmental impacts. The food and beverage industry carries a substantial environmental burden, including aspects like greenhouse gas emissions, water consumption, and waste generation. Embracing sustainable practices can mitigate these impacts by advocating efficient resource utilization, adopting renewable energy sources, and instituting waste management approaches like recycling and composting.

According to this research, government policy inactivity plays a key role in supporting sustainable practices in the food and beverage industry. Countries including India, Indonesia, and Malaysia should exercise greater care and plan for target reduction targets, as well as accompanying mitigation and adaptation initiatives. These include the abolition of bottled water and the promotion of locally grown, sustainable foods. However, the government should enforce the conservation of natural resources that allows sustainable practices in the food and beverage industry that involve the responsible use of natural resources such as land, water, and biodiversity. This includes adopting sustainable agricultural practices, protecting ecosystems, and promoting biodiversity conservation. Hence, a broad partnership of governments and industry can work together to remove consumer perception barriers and provide education and communications that will assist consumers in identifying and adopting sustainability.

Increased investment and demand for sustainable advertising needs research on how to better encourage citizens to promote sustainable practices in the food and beverage industry. Because social media usage is quickly rising in current technology, approximately 56.7% of respondents strongly agreed that social media do play a significant role. The consumer demand and preferences increase as consumers are seeking sustainable and ethically produced food and beverages. Meeting these demands can provide a competitive advantage for businesses and create opportunities for market expansion. Understanding consumer preferences and incorporating sustainable practices can enhance brand reputation and customer loyalty. Furthermore, social media can publicize the benefits and drawbacks of acquiring such behaviors, raising awareness among individuals. Such ads may aid in the interpretation of brand messages and the development of a sustainable community.

However, it is important to note that each country has its unique challenges and opportunities when it comes to implementing sustainability in the food and beverage industry. In Malaysia, issues which are faced by society related to deforestation, land degradation, and water scarcity. The palm oil industry, a major player in Malaysia, has faced criticism for its environmental impact. Implementing sustainable practices, such as sustainable palm oil production and supporting small-scale farmers, can be key areas of focus.

Subsequently, India has a diverse agricultural sector and faces challenges such as water scarcity, soil degradation, and the need for improved food safety standards. Encouraging organic farming, promoting efficient irrigation methods, and enhancing supply chain infrastructure can help improve sustainability in the food and beverage industry. Lastly, Indonesia is known for its vast agricultural resources, but it also faces deforestation, biodiversity loss, and environmental degradation. Addressing issues related to palm oil production, responsible land use, and forest conservation can be crucial for promoting sustainability in the industry.

Overall, a comparative study of Malaysia, India, and Indonesia in the context of sustainability in the food and beverage industry can provide insights into the specific challenges and opportunities each country faces and help identify strategies for fostering sustainability in this important sector. F&B industry is actively embracing other changes that affect sustainability. As a result, food consumption is anticipated to rise by 59% to 98% by 2050 because populations are growing and incomes are rising, demand for meat and other high-quality proteins is increasing, and consumers are becoming more aware of food security and the threat that climate change poses. People are aiming to eat sustainably by incorporating plate sizes and food waste awareness, as well as meals planned to have a smaller environmental impact.

However, several limitations can be found in the research. First, this research questionnaire is mainly disseminated among university students, so more than half of the respondents are current university students, who may not truly understand sustainable practices and this limits the generalizability in research. Secondly, we have limited access to information, especially on the factors that affect sustainable practices adopted by Malaysia, India, and Indonesia. Therefore, future studies should address similar research in different research settings. Future researchers are suggested to include additional variables, such as conducting interviews with sustainability professionals, consultants or leaders in Malaysia, India, or Indonesia to collect more information, improve results and use our findings as a foundation for examining consumers' perceptions.

ACKNOWLEDGEMENT

N/A

DECLARATION OF CONFLICTING INTERESTS

The authors declare that there is no conflict of interest.

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