

A Pathway to Preserving Malaysia's Natural Heritage: A Case study of Politeknik METrO Betong Sarawak (PMBS)

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Abstract. Students that are also travelers and soon to be future tourism practitioners inherit the responsibility to managing natural resources, and in order to address environmental issues, they ought to be knowledgeable and adhere to principles that are consistent with sustainable tourism. The purpose of this study is to set a standard for assessing students' perceptions on sustainable issues. 18 respondents from Politeknik METrO Betong Sarawak (PMBS) have responded to this bilingual questionnaire. The results are relatable and the findings revealed a positive perception formed by the students on the role played by government agencies, industry players and education system in Malaysia.

Keywords: sustainable, tourism, students

INTRODUCTION

An article published in [68] has stated that tourism sector showed a positive recovery but this has also become an issue to the destination host due to rising of tourist numbers and environmental concerns. However, prior to this, Khan et. al. (2021) had already suggested that socially responsible practices and effective policies are crucial for sustainable tourism development, especially in the context of post-COVID-19 recovery. Contrary to this, [34], emphasized a collective effort from individuals, communities, and the government to implement sustainable practices and conservation measures is essential for preserving natural heritage in Malaysia. A balanced approach to tourism that not only boosts the economy but also delivers socio-economic advantages to all stakeholders must be taken place to ensure inclusivity for everyone that will help to conserving and safeguarding the natural resources, culture, and heritage for future generations of the nation.

This was aligned closely with the Sustainable Development Goals (SDGs), in which promoting principles and practices that contribute to sustainable development in the tourism sector [45]. Likewise, [5] underlined the significance of sustainable practices in resource conservation, environmental management, and social responsibility so that people and organizations can take part and support sustainable development.

Similarly, [11] addressed the need for a balanced approach that integrates economic, environmental, and socio-cultural factors in tourism development, whereby over-tourism, can degrade natural environments. Thus, managing capacity is crucial to address this issue that aiming to create a harmonious relationship between tourism, the environment, and local communities.

Educating students on sustainability issue will impact them positively, in terms of their attitude towards environmental issue, behaviors and overall wellbeing. Hence, learning should revolve around engaging and interactive online courses, hands-on, nature-based activities, that will ultimately essential for promoting active

learning [17] mentioned that university students had positive perceptions regarding experiential learning through field trips, in which emphasized their benefits in enhancing knowledge, confidence, and social skills.

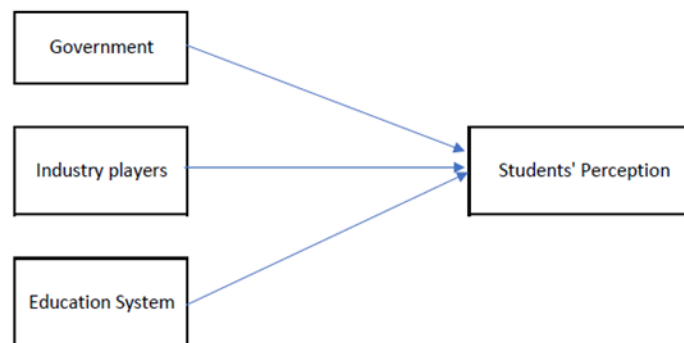
Overtourism often resulted from aggressive commercialization of local areas that the aesthetic quality of the environment might be in jeopardy and local residents felt that this act weakening their local identity [64]. In response, Malaysia drawn the National Tourism Policy 2022-2030 to revitalize and develop the tourism industry, positioning the country as a leading ecotourism destination and ensuring sustainable growth that aligns with global tourism trends [45]. Besides, the government is also committed to preserve the environment, culture and heritage of the nation [47]. However, achieving these goals would be challenging due to rise of new tourism trends, such as eco-friendly and Muslim-friendly tourism [30] Therefore, there lies the needs for more structured enforcement of sustainability practices and initiatives within education institution to improve awareness and commitment of students to sustainability practice that called for a transformation of mindsets among students to become advocates for sustainability [49]. Unfortunately, according to [3], there were several obstacles to integrating sustainability into higher education curriculum that requires comprehensive strategies to address them. Thus, the challenge remains that requires the policy makers, stakeholders and education system to effectively address these challenges.

The research objectives guided the present study as follows:

1. To examine students' perceptions of the roles played by government agencies and industry players
2. To analyse students' perceptions of the learning impacts related to sustainable tourism

This study is guided by the following key research questions:

1. What are students' perceptions of the roles played by government agencies and industry players?
2. What are students' perceptions of the learning impacts related to sustainable tourism?



H1: There is significant impact of the roles played by government agencies and industry players towards students' perception

H2: There is significant learning impacts related to sustainable tourism towards students' perception

This study investigates how government agencies, industry players, and the education system contribute to shaping students' perceptions of sustainable tourism. Findings from this research can support government agencies in shaping policies that clearly convey the significance of sustainable tourism. Besides, it can provide valuable recommendations for businesses seeking to engage and educate future tourism professionals about sustainability.

Findings of this study will keep educational institutions informed on how their curriculum can best align with both government and industry efforts. By incorporating relevant sustainable tourism concepts and practices into educational programs, educational institutions can enhance students' awareness and understanding, better preparing them for careers in this field. Besides, the findings from the study may aid government agencies develop and roll out policies that effectively communicate the importance of environmentally friendly travel.

SUSTAINABLE TOURISM IN MALAYSIA: CURRENT TRENDS AND CHALLENGES

In Malaysia, efforts to develop tourism often face challenges such as deforestation, which can conflict with the goals of sustainable tourism [28]. While [10] found that inconsistent enforcement of regulations, alongside inadequate funding for conservation initiatives, suppress the effectiveness of sustainable tourism strategies in protected areas.

Apart from that, [14] emphasized the importance of stakeholder involvement in participatory planning processes that can significantly influence tourism governance and development strategies.

GOVERNMENT AND POLICY INITIATIVES IN SUSTAINABLE TOURISM

In research conducted by [39], the findings called for understanding of historical context that it highlighted roles of industry players and government bodies in legitimizing sustainable practices. However, policies implementation would face challenges should comprehensive strategies were not being developed that in the long run, would affect its resilience against future crises in the tourism industry [53]. Malaysia, for an instance, is positioning itself as a top global destination for nature-based tourism (NBT), focusing on ecotourism, adventure, and sustainable travel. With that in mind, The National Ecotourism Plan 2016-2025 and the National Tourism Policy 2020-2030 have set in motion and aim to promote synergies between local communities, tourism, and conservation, enhancing the attractiveness of what the nation has to offer. With an estimated 35.6 million foreign visitors by 2026, NBT investments are noteworthy since they are supported by tax incentives and aid local economies and sustainability. [41]

THE ROLE OF EDUCATION IN PROMOTING SUSTAINABLE TOURISM

In Diploma in Tourism Management offered by Politeknik Malaysia, students typically learn various aspects of sustainable tourism to prepare them for responsible and environmentally conscious careers in the tourism industry. Students will undertake this course in their final year, prior to internship placement. Although the syllabus aims to teach the value of sustainability in tourism, it also discusses ecotourism, nature-based tourism, and the preservation of cultural heritage. These are so important that all these practises are bound to the policy and legislation related to sustainability tourism. This is so as to equip students with the knowledge and skills needed to implement and promote sustainable tourism practices, preparing them for roles in a tourism industry that values environmental and social responsibility (Department of Polytechnic and Community College Education (2023).

[22] highlighted the imbalance between tourism growth and sustainable practices, hence the needs for integrating strong sustainability principles into tourism education. Sustainable practices in universities, for an instance, encompass a wide range of initiatives and strategies aimed at reducing environmental impact, promoting social responsibility, and fostering economic viability. These approaches fostering a culture of sustainability that benefits both the institution and the surrounding community [67]. However, policies and strategies that prioritize preferences, needs, and demands of tourists can sometimes come at the expense of deeper engagement with sustainability principles, and potentially creating challenges in achieving truly sustainable tourism practices [62].

THE ROLE OF INDUSTRY PLAYERS

[2] have emphasized that participation from all stakeholders such as tour operators, local communities and suppliers were crucial to effectively implement sustainable practices. Besides, establishing contracts with certified operators ensures adherence to sustainable practices throughout the tourism supply chain. Nevertheless, greater community engagement in tourism planning is encouraged to promote culturally sensitive and environmentally responsible practices. Similarly, Roxas [56] have mentioned that stakeholders' cooperation and collaboration may harness advantages through regulations, conservation and livelihood initiatives such as community engagement, employment opportunities, local entrepreneurship and manpower training. Additionally, the researchers suggested

that redesigning tourism experience and synchronizing the value chain is crucial for regaining visitor confidence that will be beneficial in the long run.

In Malaysia, a joint commitment to guaranteeing the widespread adoption of sustainable practices throughout the whole tourism value chain has been made by the Tourism Productivity Nexus (TPN), Malaysia Productivity Corporation (MPC), United Nations Development Programme (UNDP) Malaysia Country Office, Pacific Asia Travel Association (PATA) Malaysia Chapter, The Habitat Foundation, and other important industry participants. The goal of this program is to establish the tourism industry as a driving force behind social responsibility, environmental stewardship, and economic sustainability. This effort focuses on promoting eco-friendly measures in tourism facilities, engaging local communities, and fostering responsible tourism education [42].

On the other hand, mentioned that the Green Circle Project by Malaysia Association of Tour and Travel Agents (MATTA) focused on sustainability by educating Malaysians on "green assets" and encouraging responsible purchasing and travel decisions [21]. It aims to prepare the tourism industry for government initiatives and incentives related to carbon neutrality, helping businesses adopt greener practices. While hotels and lodging facilities focus on waste reduction, energy-efficient operations, and ethical material procurement, Malaysia Airlines has also taken the initiative by investing in more fuel-efficient aircraft, optimizing flight routes, and putting carbon offset programs into place to mitigate emissions. While hotels and lodging facilities focus on waste reduction, energy-efficient operations, and ethical material procurement, Malaysia Airlines has also taken the initiative by investing in more fuel-efficient aircraft, optimizing flight routes, and putting carbon offset programs into place to mitigate emissions.

Students and their Perception on Sustainable Tourism. [13] found that students who underwent environmental education demonstrated a greater awareness of environmental issues and a more positive attitude towards participating in environmental protection activities. Additionally, students are more likely to become involved in sustainability-promoting activities when they demonstrate a positive mindset toward environmental education, such as volunteering for environmental causes or advocating for sustainable practices within their communities. This engagement is crucial for building a culture of sustainability.

According to Syed [63], though students have a positive attitude towards sustainability and high level of awareness on this matter, there are still areas for improvement, particularly in increasing student involvement in sustainability leadership activities at school. However, since they are exposed to global issues like climate change and social responsibility, young travelers—including students—are more likely to embrace sustainable tourism practices, as well as their desire that often seek unique and authentic experiences, which are key components of sustainable tourism [59].

METHODS

A Google Form was used to create and distribute a survey with adopted and modified items in order to find out how students felt about sustainable tourism. It was forwarded to respondents in the third week of October 2024. Students undergoing their practical training, equivalent to sixth semesters' students were chosen considering that they have learned the course in the fifth semester of their studies. The researchers selected students who have already studied sustainability tourism in class and are currently doing their internship in relevant agencies. This criteria aligns with purposive sampling method as they meet specific requirement relevant to the study. These students have foundation knowledge in sustainability, allowing researchers to focus on how academic learning translates into practical application during their internships. All 18 respondents are students of Diploma in Tourism Management in Politeknik METrO Betong Sarawak (PMBS). Considering the diversity of ethnicity in PMBS, the questionnaire was constructed in both English and Malay language.

The questionnaire was the main instrument utilized in the present study. It was comprised of specific questions on students' perceptions towards initiatives taken by governments agencies, role play by industry players as well as perceived impact of the education that shape the perception of students. Items from [43], [48], [38], [8], [32], [66], [19], [51], [54], [31], [16], [55], [12], and [15] were later adopted or otherwise modified to suit the context of this study.

The designed questionnaire consists of 22 close-ended questions in total, with three items covering the demographic profile of the respondents, 5 items tested on perception about sustainable tourism, 6 items under industry players, 3 items on education system, and 5 items tested on perception on government initiatives. Each item was measured using a 5-point Likert scale where 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; and 5 = strongly agree. Data were analyzed using the Statistical Package for Social Science Software (SPSS) version 27.0. Descriptive analyses were used to present survey results.

RESULTS AND DISCUSSION

SECTION A DEMOGRAPHIC PROFILE

This section focused on demographic profile of the respondents. A total of 18 respondents answered the questionnaire. 55.6% (10) respondent were female and 44.4% (8) were male. 83.3% (15) of respondent were 21-23 years old, 11.1% (2) were 24-26 years old and only 1 (5.6%) of the respondent are 18-20 years old, and all respondents are single.

SECTION B SUSTAINABLE TOURISM

TABLE 1. Response Rate under Sustainable Tourism

No	Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean
1	"I believe that natural resources should be preserved for future generations."			11.1%	11.1%	77.8%	4.5667
2	"I feel responsible for promoting sustainability in all areas of my life, including travel and tourism."			5.6%	11.1%	83.3%	
3	"Sustainable tourism is essential for preserving natural and cultural resources."		5.6%		22.2%	72.2%	
4	"I choose travel options that minimize environmental impact."	5.6%		5.6%	22.2%	66.7%	
5	"I am aware of the environmental impacts resulted from tourism activities."			16.7%	33.3%	50.0%	

This section focused on participants' evaluation based on the perception regarding sustainable tourism in Malaysia. For item 1, 77.8% (N=14) of the respondents indicated "strongly agree" with the statements, 11.1% (N=2) of the respondents indicated "agree", while 11% (N=2) of the respondents indicated "neither agree nor disagree" that they believed natural resources should be preserved for future generations. For item 2, 83.3% (N=15) of the respondents indicated "strongly agree" with the statements, 11.1% (N=2) of the respondents indicated "agree" and only 5.6% (N=1) of respondents indicated "neither agree nor disagree" that they felt responsible for promoting sustainability in all areas of their life, including travel and tourism. For item 3, 72.2% (N=13) of the respondents indicated "strongly agree" with the statements, 22.2% (N=4) of the respondents indicated "agree" while 5.6% (N=1) of the respondents indicated "disagree" when asked whether sustainable tourism is essential for preserving natural and cultural resources. For item 4, 66.7% (N=12) of the respondents indicated "strongly agree" with the statements, 22.2% (N=4) of the respondents indicated "agree", while 5.6% (N=1) of the respondents indicated "neither agree nor disagree" with the statements. Interestingly, 5.6% (N=1) of the respondents indicated "strongly disagree" that

they choose travel options that minimize environmental impact. Lastly, for item 5, 50.0% (N=9) of the respondents indicated “strongly agree” with the statements, 33.3% (N=6) of the respondents indicated “agree”, while 16.7% (N=3) of the respondents indicated “neither agree nor disagree” that they aware of the environmental impacts resulted from tourism activities. The mean for sustainable tourism is 4.57.

The above findings are aligned with [1] where they found that sustainable growth protects the natural resources, environment and the economic and social well-being for both present and future generations. Moreover, natural resources, especially, should be managed in a very sustainable way in order to foster economic development, at the same time, ensuring their protection for future generation [72]. [57] highlighted that responsibility is a fundamental element of sustainable development in tourism, as securing sustainable tourism depends on and requires active participation of responsible businesses and tourists and it can be an important tool for preserving natural resources effectively as sustainable tourism not only gives advantages for the current generation but also guarantees that future generation can benefit from it. Furthermore, it promotes the high-quality landscapes preservation, which is an essential element of tourism, that when implemented in a sustainable way, it can act as a catalyst for local region competitiveness [60]. According to [7], the tourism industry should take greater interest in carrying out sustainable practices like energy and water conservation, eco-friendly lodging, and the use of renewable energy to mitigate adverse environmental effects, since tourism activity is known to raise greenhouse gas (GHG) emissions and harm environmental sustainability.

SECTION C INDUSTRY PLAYERS

TABLE 2. Response Rate under Industry Players

No	Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean
1	"Sustainable tourism practices should be prioritized in tourism planning and management."			5.6%	22.2%	72.2%	4.6944
2	"Tourism businesses should adopt environmentally friendly practices to minimize negative impacts."			5.6%	11.1%	83.3%	
3	"Local communities should be actively involved in tourism planning and development."				27.8%	72.2%	
4	"Environmental conservation efforts should be a priority in tourism development among stakeholders."			5.6%	11.1%	83.3%	
5	"Sustainable tourism has a positive impact on the preservation of local culture."			5.6%	16.7%	77.8%	
6	"There is sufficient collaboration between government agencies and tourism stakeholders in Malaysia in developing a green policy and practices."		5.6%	5.6%	22.2%	66.7%	

This section focused on respondents’ perception on industry player responsibility and engagement towards sustainability tourism in Malaysia. For item 1, 72.2% (N=13) of the respondents indicated “strongly agree” with the statements, 22.2% (N=4) of the respondents indicated “agree” while 5.6% (N=1) of the respondents “neither agree nor disagree” that sustainable tourism practices should be prioritized in tourism planning and management. For item 2, 83.3% (N=15) of the respondents “strongly agree” with the statements, 11.1% (N=2) of the respondents indicated “agree” and 5.6% (N=1) of the respondents indicated “neither agree nor disagree” that tourism businesses should adopt environmentally friendly practices to minimize negative impacts. For item 3, 72.2% (N=13) of the respondents indicated “strongly agree” while 27.8% (N=5) of the respondents indicated “agree” that local

communities should be actively involved in tourism planning and development. For item 4, 83.3% (N=15) of the respondents indicated “strongly agree” with the statements, 11.1% (N=2) of the respondents indicated “agree” while 5.6% (N=1) of the respondents indicated “neither agree nor disagree” that environmental conservation efforts should be a priority in tourism development among stakeholders. For item 5, 77.8% (N=14) of the respondent indicated “strongly agree” with the statements, 16.7% (N=3) of the respondents indicated “agree” and only 5.6% (N=1) of the respondents indicated “neither agree nor disagree” that sustainable tourism has a positive impact on the preservation of local culture. For item 6, 66.7% (N=12) of the respondents indicated “strongly agree” with the statements, 22.2% (N=4) of the respondents indicated “agree” while only 5.6% (N=1) indicated “neither agree nor disagree” with the statements. However, 5.6% (N=1) of the respondents indicated “disagree” that there is sufficient collaboration between government agencies and tourism stakeholders in Malaysia in developing a green policy and practices.

As mention [58], in order for tourism to be sustainable, stakeholders must engage in the decision-making process. The main challenge to implement sustainable tourism is finding a win – win situation between stakeholders that coming with respective interests [65]. To address these obstacles and implement sustainable tourism, it is essential to focus on the development of a collective understanding and enhance collaboration among stakeholders. Furthermore, a greater attention must be put on the incorporation of sustainable tourism with wider sustainable development goals, stressing the inclusive engagement of different stakeholders, including locals, businesses and tourists. Fundamentally, sustainable tourism can give a positive opportunity for communities, but cautious planning and management are important in order to maintain long-term viability and mitigate negative impacts. Promoting cultural tourism and eco-tourism, carefully developing local products and infrastructure, and implementing tourism activities in sustainable way is a potential path to achieve sustainable tourism [26]. In addition to reducing the negative effects, prudent and mindful implementation of sustainable tourism methods can boost local economies and create new employment while protecting the natural environments and cultural heritage in the region [29]. This corresponds to Sharpley (2021) as the researcher mentioned that, if sustainable tourism carefully planned and managed, it can preserve traditional practices of local communities, protect cultural heritage and give significant economic advantages to them as sustainable tourism can drive income growth, create employment opportunities, and support the development of small and medium-sized enterprises. (Deladem, Xiao, and Tetey, 2021).

SECTION D EDUCATION SYSTEM

TABLE 3. Response Rate under Education System

No	Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean
1	"Educational institutions have a role in promoting sustainable tourism."				27.8%	72.2%	4.6667
2	"The course DTM50183 Sustainable Tourism has significantly increased my understanding of sustainable tourism principles."				33.3%	66.7%	
3	"I understand the principles of sustainable tourism and their importance for the future of the tourism industry."				38.9%	61.1%	

This section focused on respondents’ perception on education system in Malaysia with regards in promoting sustainable tourism in Malaysia. For item 1, 72.2% (N=13) of the respondents indicated “strongly agree” with the statements and 27.8% (N=5) of the respondents indicated “agree” that educational institution have a role in promoting sustainable tourism. For item 2, 66.7% (N=12) of the respondents indicated “strongly agree” with the statements and 33.3% (N=6) of the respondents indicated “agree” that the course DTM50183 Sustainable Tourism had significantly increased their understanding of sustainable tourism principles. For item 3, 61.1% (N=11) of the

respondents indicated “strongly agree” with the statements while 38.9% (N=7) of the respondents indicated “agree” that they understand the principles of sustainable tourism and their importance for the future of the tourism industry

These results substantiate the perspectives presented in Choudhary, [20] as the researchers agreed that education should be a catalyst for sustainable development. Furthermore, educational institutions and universities should be mandated to organize educational activities with regards to tourism to promote sustainable tourism development. Ali et. al. (2021) also mentioned that related stakeholders and educators should properly take advantage of the education tourism practices by raising awareness, and improving education standard and highlighting its positive impacts. To do so, education stakeholders must provide available information with regards to education tourism and develop a suitable framework and policies from which related parties can gain essential skills and knowledge. According to Politeknik METRo Betong Sarawak (2024), DTM 50183 Sustainable tourism teach students the way to manage tourism resources and how to reduce the negative impact of tourism development. Students learned topics about sustainable development progress like carrying capacity, conservation and preservation, visitor management techniques and environmental impact assessment that are employed to mitigate the negative impact done by tourism activities.

SECTION E GOVERNMENT INITIATIVE

TABLE 4. Response Rate under Government Initiative

No	Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean
1	"I believe that sustainable tourism development benefits the local."			11.1%	27.8%	61.1%	4.4000
2	"I am aware that Malaysia has a formal environmental policy in place."			11.1%	33.3%	55.6%	
3	"The government provides sufficient funding for sustainable tourism initiatives."		11.1%	16.7%	33.3%	38.9%	
4	"Government initiatives effectively promote sustainable tourism practices among industry stakeholders."			5.6%	44.4%	50%	
5	Government strategies are crucial in driving the sustainability agenda in tourism			5.6%	27.8%	66.7%	

This section focused on respondents’ perception on government initiative towards promoting sustainable tourism in Malaysia. For item 1, 61.1% (N=11) of the respondents indicated “strongly agree” with the statements, 27.8% (N=5) of the respondents indicated “agree” while only 11.1% (N=2) of the respondents indicated “neither agree nor disagree” when asked whether they believed that sustainable tourism development benefits the local. For item 2, 55.6%(N=10) of the respondents indicated “strongly agree” with the statements, 33.3% (N=6) of the respondents indicated “agree”, and only 11.1% (N=2) of the respondents indicated “neither agree nor disagree” that they were aware that Malaysia had a formal environmental policy in place. For item 3, 38.9% (N=7) of the respondents indicated “strongly agree” with the statements, 33.3% (N=6) of the respondents indicated “agree” while 16.7% (N=3) of the respondents indicated “neither agree nor disagree”. Furthermore, for this item, there were 11.1% (N=2) of the respondents indicated “disagree” that the government provides sufficient funding for sustainable tourism initiatives. For item 4, 50% (N=9) of the respondents indicated “strongly agree” with the statements, 44.4% (N=8) of the respondents indicated “agree” and only 5.6% (N=1) of the respondents indicated “neither agree nor disagree” that government initiatives effectively promote sustainable tourism practices among industry stakeholders. For item 5, 66.7% (N= 12) of the respondents indicated “strongly agree” with the statements, 27.8% (N=5) of the respondents indicated “agree” while only 5.6% (N=1) of the respondents indicated “neither agree nor disagree” that government strategies are crucial in driving the sustainability agenda in tourism.

These research findings correspond closely with those reported by [26] as the researcher mentioned that governments must emphasize sustainable tourism initiatives and provide support and adequate resources to stakeholders to make sure implementation of sustainable tourism become reality. This is supported [36] as they found that challenges to implementation of sustainable tourism is the inadequacy of incentives for industry players. Lack of incentives presents an obstacle in convincing industry players to embrace tourism in more sustainable way. Therefore, the absence of support and incentives from the government will create a barrier for sustainable tourism implementation, as industry players in tourism tend to retain a traditional and more profitable method but not so environmental responsible. Moreover, the lack of incentives can hinder the adoption of sustainable practice in tourism by communities and small businesses that have small fund to commit in these initiatives [25]. So, initiatives and support from the government is very important to make sure the sustainable tourism can become reality. [4] mentioned that sustainable tourism implementation also demands backing and proper resources from government. As per [44], there are several initiatives and supports by Malaysia Government for industry player and stakeholders documented in National Tourism Policy 2020 – 2030. It outlines strategies that requires the involvement of local authorities in tourism destination management and establish Meetings, Incentives, Conferences, and Exhibitions (MICE) unit, fundings and synergy between government and industry players, particularly for rural tourism and education institutions for workforce development and revitalizing the economic growth from homestay business that highlight the community-based tourism. To achieve the objectives of the National Tourism Policy (NTP) 2020–2030, key strategies include enhancing public-private sector partnerships and embracing digitalization. These efforts aim to boost competitiveness, foster innovation, and promote inclusive and sustainable development, in alignment with National Ecotourism Plan 2.0 goals, 17 United Nations Sustainable Development Goals (UNSDG) and the Twelfth Malaysia Plan (12MP) [40].

DISCUSSION OF FINDINGS

This study is organized around two primary research questions and corresponding hypotheses, as outlined in Chapter One.

H1: TO EXAMINE STUDENTS' PERCEPTIONS OF THE ROLES PLAYED BY GOVERNMENT AGENCIES AND INDUSTRY PLAYERS.

Hypothesis 1 (H1) seek to examine students' perceptions of the roles played by government agencies and industry players. The percentage and mean value are as shown in Table 2 and 4.

Based on the findings, the mean value stood at 4.40 for government initiative and 4.70 for industry players on a 5-point Likert scale. It suggests a high level of perception, as it is close to the maximum value of 5. This indicates that students generally view the contributions of government agencies and industry players favorably, suggesting an appreciation for their roles in advancing the tourism industry.

These positive perceptions are consistent with various studies indicating that students generally hold favorable views towards initiatives from both sectors. In research conducted [37], for an instance, results shown that students value the role of government in developing policies and funding that support career in tourism and hospitality industry. Further to this, their understanding has instilled the passion to stay in the field and become the industry players as they believe it enables the creation of new job opportunities [35]. In Portugal, on the other hand, the government establishing regulations that support sustainability and forming collaborations with educational institutions to match training with industry demands. Additionally, they sponsor sustainable practices and use strategic campaigns to draw in new talent [18].

H2: TO ANALYSE STUDENTS' PERCEPTIONS OF THE LEARNING IMPACTS RELATED TO SUSTAINABLE TOURISM

Hypothesis 2 (H2) seek to analyse students' perceptions of the learning impacts related to sustainable tourism. The data collected from respondents was analyzed as presented in Table 1 and 3.

Based on the presented results, the mean value indicated 4.67 for the role of education system on a 5-point Likert scale. The score demonstrates a positive perception as it approaches the maximum score on the scale. As the students given a nod on the role of education system, it naturally translates into a favorable result on their understanding about sustainable tourism as it has shown a mean score of 4.57, in which a notably high level of perception.

This is consistent with [27], where the researchers emphasized that students of Generation Z have a basic awareness of sustainability, primarily focusing on environmental aspects. They highlighted the essential role of education in advancing sustainability, advocating for both formal and informal educational initiatives that start at home and extend to the community. Similarly, tourism curriculum should include both economic and non-economic impacts that may enhance awareness of students and broaden their understanding and perspective within the area of interests [50]

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

While the outcomes are useful, there are some limitations of this research that should be addressed in future studies on issue related to sustainability tourism. Considering the survey was conducted using purposive sampling method in only one institution in Sarawak, Malaysia, any generalizations of results should be taken into perspective. Future studies would be interesting for the young researchers to explore and compare perception of sustainable tourism before and after internship experience as it would provide a clearer picture for students of jobs and careers in tourism industry. Besides, investigating the specific behaviors behind the choice to participate in sustainable practices would be interesting, especially considering global differences in sustainability priorities [24].

CONCLUSIONS

The study aims to ascertain the perception of students on the role played by government agencies and industry players and education system in Malaysia. The findings showed a positive result that brought a positive connotation to both hypotheses that was constructed in the beginning of the chapter. Education of sustainability can be a powerful tool for achieving sustainable goals, thus online sustainability education to effect meaningful change and suggests that thoughtful design and evaluation are crucial for maximizing its benefits [24].

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