

The Role of Tourism Education in Promoting Sustainable Tourism Awareness, Attitudes, and Behaviour among Secondary School Students in the Maldives

Johnson L I P*

Abstract

This study examines the role of tourism education in promoting sustainable tourism awareness, attitude, and behaviour in the islands of the Maldives among secondary students. Education represents a significant role in nurturing sustainable tourism. Among the other courses, travel and tourism introduces most of the concepts of sustainable tourism. This study utilizes a mixed, descriptive, cross-sectional research design. This study contributes to tourism education literature by providing insights from a small island developing state. In addition, purposive sampling techniques are used to collect data from five schools through the tourism teacher. Data were collected from 46 students in Grades 9 and 10 from schools in the Maldives, using descriptive statistics, particularly the mean, correlation, and linear regression. Open-ended questions were analyzed by thematic analysis. Responses from the 46 participants were carefully reviewed, coded, and grouped into themes. The questionnaire has five components: demographic information (gender, grade, and tourism subject studied), awareness of sustainable tourism (AST), the role of tourism education in sustainability awareness (TESA), attitudes and behaviour toward sustainable tourism (ABST), and an open-ended question about the participant's opinions. Four components have questions quantified by the Likert scale and interpreted. The last component is analysed by the

* Maaungoodhoo School, Ministry of Education, Maldives;
johnsonlourdajirudayapackiam@gmail.com

thematic method. This study is to determine the relationship between Tourism Education in Sustainable Awareness (TESA) and Awareness, Attitude, and Behaviour towards sustainable tourism (AST & ABST). The results illustrate a positive correlation, indicating the impacts of TESA on AST & ABST, who adopt travel and tourism courses. This study also proposes that tourism lessons should increase students' awareness of climate change. Hence, tourism education should focus more on climate change and its impacts. School projects require augmenting relations with sustainable tourism; these can be secured by including these findings in the tourism education curriculum. The protection of natural resources should be encouraged in tourism education. Tourism education has the potential to transform the tourism industry in the Maldives into something more sustainable and responsible, supporting environmental protection and socio-economic development. The results of the inductive thematic analysis show that tourism education not only enhances students' awareness but also influences behavior, making it a powerful tool for achieving sustainable tourism in the Maldives. The limitation of this investigation is that this study is specific to four inhabited islands in the Maldives, which can affect the generalisation of the findings. The convenience sampling may introduce systematic distortion.

Keywords: Tourism Education, Sustainable Tourism Awareness, Secondary School Students, Tourism Curriculum, Sustainable Tourism Behaviour, Environmental Awareness.

Introduction

Sustainable tourism is a pivotal activity and an important concept to emphasize for the protection and conservation of tourism resources for future posterity. Education also engages an interactive responsibility in promoting sustainability awareness among locals and tourists. Maldives is a small island developing state with tourism potential. The Maldives is an archipelago of 1192 islands divided into 26 geographical atolls, extending 870 km from 7° North to 0.5° South of the equator (Cerri et al., 2024). Tourism plays an enormous role in the economic developments comprising foreign exchange earnings, national gross domestic product, and employment opportunities. Its natural resources, marine ecosystems, coral reefs, beaches, and biodiversity are pull factors for tourists. The rapid

growth in tourism may pose serious challenges, including environmental degradation, climate change, and unsustainable applications. Education for sustainable development (ESD) is an integral part of quality education that enhances the cognitive, social, emotional, and behavioural dimensions of learning for all ages (UNESCO, 2020). ESD initiatives, such as eco schools, in developed countries operate in a competency-based role in the education landscape (Hasanova et al., 2024).

Education empowers students to work on projects related to environmental tourist sites. The education program should also be digitized to create enrichment materials that students can use to learn at any time and place (Abdullah Ambusaidi, 2024).

In the Maldivian context, a developing island state, tourism is not exclusively an economic sector but also a component of everyday life. Maldivian students mature in local communities that are directly or indirectly linked to tourism. Despite this, limited empirical research has examined whether school-level education effectively fosters sustainable awareness among students.

Secondary education acts as a bridge to develop awareness and responsible behaviour among the students. At this juncture, students start to think critically and develop long-term attitudes for sustainable development and environmental protection. If education effectively instils the importance of sustainable principles in adolescents' minds, they develop a stronger commitment to protecting natural resources, such as coral reefs, beaches, and mangroves. They also support the local community and encourage practices that support responsible tourism.

If the forthcoming generation doesn't understand the threat befalling. Uncontrolled conventional tourism poses potential threats to many natural areas around the world (Sunlu, 2003). Environmental degradation and pollution can lead to health problems, loss of livelihoods, and displacement among the rural communities in a developing nation (Sankhala, 2025). Therefore, understanding the educational value of sustainable tourism is timely and relevant. However, conducting large-scale national research can be resource-intensive. Therefore, pilot studies conducted in a specific target group or small communities are valuable in preliminary study. Pilot studies fulfil a range of important functions and can provide valuable insights for other researchers (van Teijlingen et al., 2002). Such studies give initial insights and identical patterns for future research.

The main intention of this study is to emphasize secondary students from a selected island in the Maldives and to understand whether tourism education contributes to the promotion of sustainable tourism awareness. By examining the students' perspective and awareness level by the

structured questionnaire. The research objective is to provide explanatory evidence regarding the educational impacts from the tourism-related subject. Although the scale is limited, it renders useful implications for curriculum development, policymaking, and sustainable planning in island communities, as well as for the International General Certificate of Secondary Education (IGCSE).

The study carefully seeks to assess students' understanding of sustainable tourism concepts and examine whether exposure to tourism education influences their awareness of environmental and socio-cultural sustainability issues. The principal idea of this research is to contribute to the discussion on integrating sustainable education within the tourism curriculum in small island developing countries.

While the study is context-specific and exploratory in nature, it defines the research gap amongst the Maldivian education sector, tourism sector, and sustainable tourism. The findings may serve as a foundation for multi-island destination studies and may assist the educators and policymakers in strengthening sustainable tourism in the education curriculum. Furthermore, this study may open an opportunity to evaluate the importance of sustainable tourism in secondary education for any destination.

Literature review

Education for sustainability

Education for sustainability (EfS) is a continuous process to enrich skills, knowledge, and values to create an effective environmental, impartial economic, and comprehensive society. Individual commitment such as faculty is strong enough about the importance of sustainability but inadequate academy support is for Education for Sustainable (EfS). Students, on the other hand, recognize the current focus on sustainability but call for more interactive and context relevant learning experiences (M. Shareef, 2025). This methodology in education(E) for sustainable development shows that learning for sustainable tourism is not only a matter of introducing the concept of sustainable tourism into the curriculum but also about the institutions and lecturers commitment towards sustainability and this will not ignite awareness(A) alone but also enable social learning toward a sustainable tourism(ST) future (Lund-Durlacher, 2015). Henceforth, tourism education of sustainable awareness is considered as important for sustainable development. Dedication of a teacher is also an important part of promoting sustainability among students. The tourism industry and community relationship are interdependent and equally supportive, which can situate the industry's

objective within community development. This ensures prioritizing community stakeholders' involvement in tourism development activities. For instance, measuring tourism's contributions to a regional community's educational accomplishments should reflect local young people's and children's preferences for learning opportunities (Muhtasim Mir, Shelley, and Ooi, 2024). Low educational value of cultural tourism resources may decline tourist interest (Meng, L., Yan, F., Fang, Q., & Si, W., 2024), which can negatively affect the sustainable development of tourism, as it minimizes opportunities for cultural learning, awareness, and long term community engagement. Modern methods and technologies enhance sustainability education in tourism management. Artificial intelligence and data analytics provide deeper understanding into the field and student behaviours. Using technology and working collectively with other students to learn gives students real world skills that promote responsible tourism and community contribution. Evaluating the impact of sustainable education (SE) entails smart technologies, mixed methods including surveys, observations, and interviews, measuring behavioural (B), environmental, and economic results. Longitudinal monitoring ensures the enduring effect, demonstrating how education shapes tourist behaviour (TB), business practices, and community level sustainable development in tourism. (Al Hiti & Eltayib, 2025). This shows sustainable education sculpt the behaviour and create awareness (ABST) among the tourist.

Tourism Education (TE)

The expert's investigation is that lack of tourism education in the curricula among the intermediaries and secondary level students directs to deficient knowledge for the next level. Regardless of implementing various programs shaping regulation and stimulus instruments, the Ministry should focus on including tourism education as part of their curricula. (Jaber & Marzuki, 2019). Tourism education (TE) is required for any country among the students in all stages of education to achieve results in the field of tourism development outcomes.

Tourism education (TE) plays a main role in promoting societal shifts toward sustainability. However, the connection between tourism destination development and the size and or quality of its workforce remains a relatively unexplored area in tourism research (Moisescu, Ovidiu & Gică, Oana & Coros, Monica, 2020). Government investments in education and digital infrastructure are constructively associated with tourism attainment, supporting the idea that such investments are pivotal for promoting sustainable economic growth within the tourism sector. Therefore, both national and local bodies should implement cohesive tourism education strategies, including the betterment of vocational

training in hospitality and programs to improve digital literacy (Dzitac, Simut, Badulescu, Simut, & Badulescu, 2025). Around the globe, the tourism industry faced continuous pressure due to terrorism, war, economic fluctuation, environmental crisis and health issues. This growing industry therefore calls for a more skilled and innovative workforce. In response to these pressures, tourism education should adopt a philosophic practitioner approach by integrating the dynamic element of lifelong learning that is innate in professional practice. Tourism is not just a single discipline but consists of two different fields. However, this divergence between fields and disciplines suggests that tourism is often viewed as an object of study (a field) rather than as a structured way of studying (a discipline) (Kunwar, 2018). Education level importantly enhances sustainable habits. Every individual is required to participate in sustainable awareness (SA) campaigns and practically to educate about the long term benefits of sustainable tourism. Moreover, balanced development can be achieved by the collaboration of the government and local communities (S S, Ramya & M, MS, 2025).

Tourism education for Sustainability awareness (TESA)

In their paper published in 2024, Smiljka Kesić and Emilija Lipovšek observed that the majority of respondents (86%) felt that carefully constructed ESP classes on sustainability in tourism greatly increased their understanding of environmentally friendly concepts. In addition, 53% of respondents stated their readiness to explore the topic of sustainability and incorporate it into their future job endeavours, whereas 62% admitted their intention to act sustainably in their everyday lives. The findings of the study confirm the need to incorporate sustainability education (SE) into ESP courses, thus emphasizing the ethical aspect of the concept and proving its success in raising awareness (A) about sustainable tourism (ST) practices. Moreover, the methods used in the research can be replicated in other scientific fields for educational purposes, and at the same time, provide possibilities for further investigation into morphology, phraseology, and sociolinguistics. This study enforces the importance of Tourism Education for Sustainability awareness (TESA).

Theoretical framework

The theoretical framework that is going to be used in the analysis of this research is rooted in relevant theories on education and sustainable tourism. Firstly, Sustainable Tourism Theory is defined as ensuring the ability of the needs of current tourists and residents to be met without compromising the quality of the environment for future generations. In

particular, sustainable tourism focuses on awareness and responsibility as the essential features for achieving this objective.

From the study conducted by R.W. Butler about Sustainable tourism, he suggests action strategy for the governments in table 2 with 18 points. The 8th point states as “8. Design and implement educational and awareness programmes (EA) which will sensitize people to the issues of sustainable tourism (ST) development” (Richard W. Butler, 1999).

In this connection, tourism education in Sustainable awareness (TESA) can be seen as the independent variable, which includes providing students with necessary knowledge, skills, and values concerning sustainable tourism, while sustainable tourism awareness (AST) serves as the dependent variable showing their level of attitude and behaviour towards sustainable tourism (ABST).

Research Gap

Despite numerous past studies related to sustainability education, tourism management, and sustainable tourism, there is inadequate literature that concentrates directly on the connection between tourism education and sustainable tourism awareness among secondary school students in the Maldives. Previous studies were mostly carried out at higher educational establishments, in the tourism sector itself, and in other countries rather than in secondary schools where the future employees and decision-makers of tourism are prepared.

The novelty of this study is unique is the consideration of secondary students in the Maldives as the target group for analysis, a setting where there is little academic research in tourism education conducted. While earlier research focused on the influence of tourism education on university students, tourism practitioners, or even sustainability education, this study aims to assess the impact of tourism education on secondary students' sustainable tourism awareness.

Moreover, tourism education awareness is discussed from the perspective of attitudes and behavioural intentions towards sustainable tourism. This gives an in-depth insight into the process of sustainable tourism education and how it affects students' awareness. The findings of this research can provide valuable information regarding sustainable tourism education practices in the country.

Methodology

This study incorporates a mixed descriptive design combining qualitative and quantitative approaches to examine tourism education in promoting sustainable tourism awareness among secondary students in the Maldives.

The quantitative consists of objective type, closed-end questions, while the qualitative method includes an open-end question to capture the perspective of the participants. These two approaches enable a comprehensive understanding of the research problem by numerical data and in-depth insights. Moreover, it allows researchers to understand students' perceptions, awareness levels, and attitudes towards sustainable tourism in the Maldives.

The quantitative data collected from the questionnaires were analysed through the use of descriptive statistics like mean and percentages to reveal the students' levels of awareness on sustainable tourism. The Spearman Rank Correlation Coefficient was adopted for examining the association between tourism education and awareness of sustainable tourism due to the ordinal data collected through the Likert scale. Thematic analysis was adopted for analysing the qualitative data collected through open-ended questions.

Population and sample

The population for this study consists of secondary-level students from grades 9 and 10, who only adopt the travel and tourism subject in their respective curricula. A total of 46 students participate in this questionnaire from Grades 9 and 10. Participants are selected from four schools and distributed via medium to the students. The details of the schools and students are kept anonymous. This sampling method is considered appropriate because the research is precise with the students who are studying travel and tourism (0471) and are likely to have some level of awareness about sustainable tourism.

Research Variables

This study consists of three main variable

Independent Variable (IV): Tourism Education, this relate to the knowledge, lesson and learning experience about sustainability through Travel and tourism

Dependent Variables (DV):

- a) Sustainable Tourism Knowledge / Awareness, this variables relate to student understanding about sustainable tourism, environment impacts, coral reef protection, waste management and sustainable tourism helps to protect local culture
- b) Sustainable Tourism Attitudes and Behaviour, this variable relate to students' attitudes and behaviour towards sustainability such as eco-friendly business, protection of environment, follow rules, believe

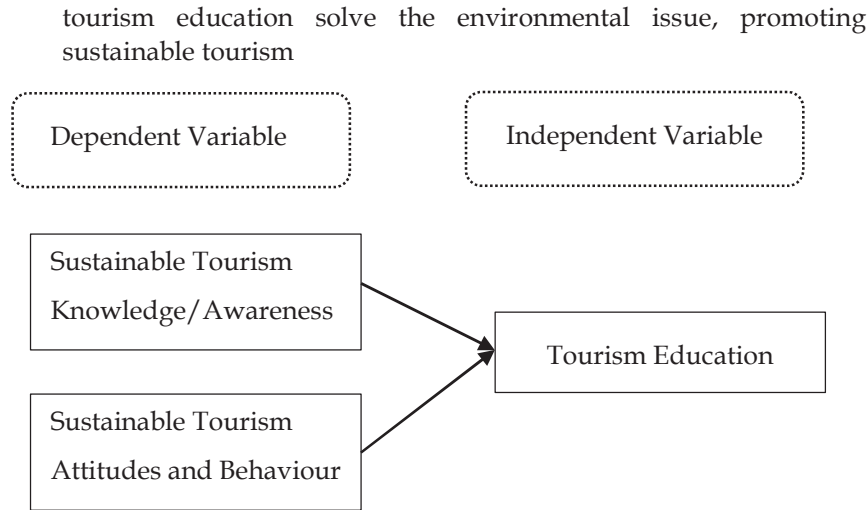


Figure 1: - Conceptual framework for quantitative data

Hypothesis Testing

H0: Tourism education has no significant effect on sustainable tourism awareness.

H1: Tourism education positively influences sustainable tourism awareness among secondary students in Maldives.

Correlation coefficient interpretation:

Hypothesis	Supports correlation coefficient interpretation
H0	$r = 0$ - No relationship
H1	$r > 0$ - Positive relationship

Data collection instrument

Data used in this research were collected through a structured questionnaire that was developed via Google Forms. In developing the questionnaire, the researcher designed it using personal judgment based on the purpose of the research and previous studies related to the research topic.

The questionnaire was sent to the students of grades 9 and 10 through the medium to complete it. The Grade 9 and 10 students are taken from four divergent island schools in the Maldives. These students are already studying the travel and tourism subject – IGCSE Cambridge curriculum. A

total of 46 secondary students participate in this questionnaire, who study travel and tourism (0471). The researcher collects the data by using Google form and analyses qualitative and quantitative data. The closed-end quantitative data is measured by the table generated from the Google form. The table is analysed carefully and charts were created by percentage and frequency. The results presented in the form of tables and charts to identify the trends in students' awareness of sustainable tourism. The survey instrument included both closed- and open-ended questions. While closed-ended questions served the purpose of gathering quantitative data, open-ended questions enabled participants to elaborate on their opinions and knowledge regarding the research topic.

Types of Questions in the Instrument

a. Closed-ended Questions

The closed-ended questions were constructed in a structured way through the use of a questionnaire that used a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to determine the level of agreement by students on certain statements.

These questions were meant to provide quantitative information from students regarding their awareness and perception of sustainable tourism.

b. Open-ended Question

There was one open-ended question which would allow for collection of qualitative data:

"In your opinion, how can tourism education help promote sustainable tourism in the Maldives?"

The questionnaire consisted of five sections.

Section 1: Demographic information (gender, grade, and tourism subject studied)

Section 2: Awareness of sustainable tourism (AST)

Section 3: Role of tourism education in sustainability awareness (TESA)

Section 4: Attitudes and behaviour toward sustainable tourism (ABST)

Section 5: Descriptive opinion of the participants about how tourism education improves sustainable tourism in the Maldives.

Table 1: Demographic profile of students' participated

Gender	Grade	Studied Travel and Tourism	Participants'
Female	Grade 10	Yes	21
Female	Grade 9	Yes	7
Male	Grade 10	Yes	12
Male	Grade 9	Yes	6

Table 1 illustrates the essential demographic characteristics of the 46 students for the online questionnaire from the secondary level, who took Travel and Tourism. The variable includes gender, Education level, studied travel and tourism and number of participants.

Ethical standards were strictly followed during the research process. Participation is voluntary and respondents were informed about the purpose of the study very clearly. To ensure anonymity and confidentiality, no personal details were collected from the participants. Each participant is assigned the code P1, P2, respectively, for data analysis.

Only secondary level students have been taken for the sampling since the research is specific only to the secondary level students' in Maldives. The consecutive sections of the questionnaire dealt with the dependent and independent variables. The three sections have two dependent variables and one independent variable. Q4-Q8 and Q14-18 are dependent variables (DV) as well as Q9-Q13 are independent variables (IV). In DV Q4-Q8, inquire about the awareness of sustainable tourism (AST) and Q14-Q18, inquire about attitudes and behaviour toward sustainable tourism (ABST). In the meantime, IV Q9-Q13 collects the role of tourism education in sustainability awareness (TESA).

Q19 is an open-end question for thematic analysis: "In your opinion, how can tourism education improve sustainable tourism in the Maldives?" Which collects the opinion of the participants, and the following process is involved.

1. Familiarization with responses
2. Coding of key ideas and concepts
3. Grouping codes into broader themes
4. Interpreting and presenting themes with supporting quotes

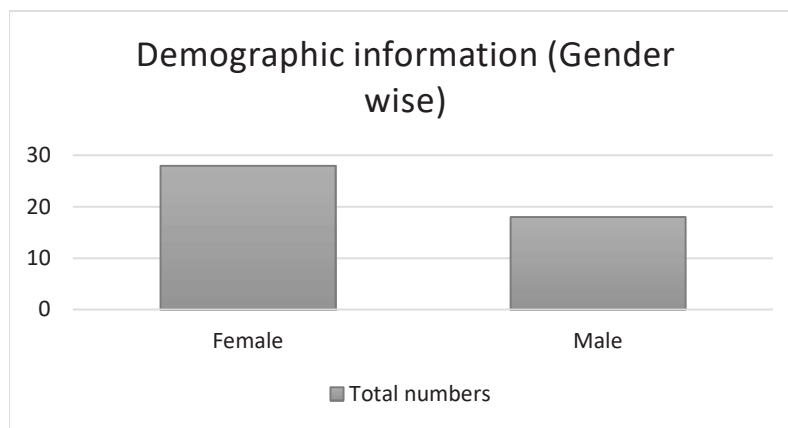
Results

Findings by Question Type

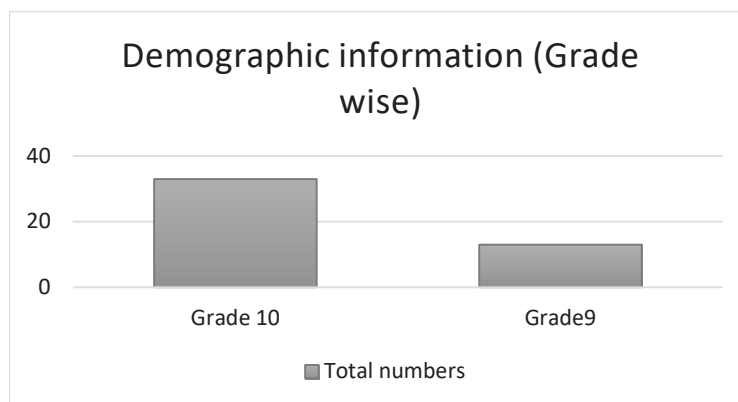
Table 2

Section A: Demographic information (Gender, Tourism subject studied)

Gender	Tourism Subject Studied	Numbers
Female	Yes	28
Male	Yes	18

**Figure 2****Table 3:** Demographic information (Grade, Tourism Subject studied)

Grade	Tourism Subject Studied	Numbers
Grade 10	Yes	33
Grade 9	Yes	13

**Figure 3**

Likert scale interpretation

Data interpretation of the participants' attitudes towards the questionnaire statements using the 5-point Likert-scale, as can be seen in Table 4, is based on the following mean scores underpinned by (Suebongsuwan & Nomnian, 2020).

Table 4

Score range	Mean rating	Interpretation
1.00–1.80	Strongly disagree	Very Negative
1.81–2.60	Disagree	Negative
2.61–3.40	Unsure	Moderate
3.41–4.20	Agree	Positive
4.21–5.00	Strongly agree	Very Positive

Section B: Awareness of sustainable tourism - AST (DV Q4:Q8)

Table 5

Q	Q4	Q5	Q6	Q7	Q8	Mean X1
Mean X	4.02	4.31	4.39	4.27	4.06	4.21

Based on the results of Section B, it is evident that students have considerable knowledge about sustainable tourism, with a mean score of 4.21 (Mean X_1). From Questions 4 to 8, there were high mean scores, indicating a highly positive level of understanding.

The areas where students showed extensive knowledge include:

The definition of sustainable tourism.

The environmental consequences of negative tourism practices.

The necessity for proper waste disposal.

The significance of sustainable tourism in cultural preservation.

The conservation of coral reefs.

This implies that students have good theoretical knowledge of sustainable tourism.

Section C: Role of tourism education in sustainability awareness TESA (IV Q9:Q13)

Table 6

Q	Q9	Q10	Q11	Q12	Q13	Mean X2
Mean X	3.60	3.35	4.00	3.39	3.66	3.60

The analysis of Section C reveals the influence of tourism education on the awareness of students with a moderately positive value of 3.60 (Mean X₂). Even though the majority of students have some knowledge about environmental protection, climate change, and the necessity to preserve natural resources, there are certain drawbacks.

Specifically, these include:

Q10 (Mean = 3.35): The level of awareness of climate change due to tourism lessons is relatively low, implying that this topic is not widely covered in the curriculum.

Q12 (Mean = 3.39): Limited involvement in the tourism school project indicated a lack of practical knowledge.

Q13 (Mean = 3.66): The encouragement of tourism education for protecting natural resources, it is not enough to develop the environmental behaviour among students.

This result shows more practical and activity based learning is required.

Table 7

Section D: Attitudes and behaviour toward sustainable tourism ABST (DV Q14:Q18)

Q	Q14	Q15	Q16	Q17	Q18	Mean X3
Mean X	4.00	3.62	4.06	3.91	3.66	3.85

According to the results in section D, students display a positive attitude and behaviour regarding sustainable tourism practices, with the average mean score being 3.85 (Mean X₃).

Positive attitudes displayed by students include the following:

Support of green tourism organizations.

Importance of environmental conservation for future generations.

Encouragement of tourists to behave according to the rules.

A belief that tourism education could solve environmental issues in the Maldives.

Interest in the promotion of sustainable tourism.

Improvements observed in certain areas:

Q15 (Mean = 3.62) – students should enhance their sense of responsibility as tourism professionals in the future;

Q18 (Mean = 3.66) – even though they show interest in the promotion of sustainable tourism, the interest level should be higher

Overall analysis

According to the findings, there is a high awareness level ($X_1 = 4.21$), medium-level influence by tourism education ($X_2 = 3.60$), and positive attitudes and behaviour towards sustainability in tourism ($X_3 = 3.85$). These results show that while students possess good knowledge about sustainable tourism, tourism education could play an even better part in building greater awareness and proper behavior, especially in areas such as climate change.

Relationship between TESA (IV) and AST & ABST (DV)

Table 8: Data shows the Mean value for the TESA (IV) and AST & ABST (DV)

Participants	Gender	Grades	Studied Tourism	IV Q9-Q13	DV Q4-Q8:Q14-Q18
P01	Female	Grade 10	Yes	4	4.8
P02	Female	Grade 10	Yes	3.8	4.5
P03	Female	Grade 10	Yes	3.6	4.2
P04	Female	Grade 10	Yes	3.4	4.7
P05	Female	Grade 10	Yes	4	4.9
P06	Female	Grade 10	Yes	3.6	4.7
P08	Male	Grade 10	Yes	4.8	4.7
P09	Male	Grade 10	Yes	2.8	3
P10	Female	Grade 10	Yes	4.4	4.7
P11	Male	Grade 10	Yes	1	1.2
P12	Female	Grade 10	Yes	3	2.8
P13	Female	Grade 10	Yes	4	4.1
P14	Female	Grade 10	Yes	4	4.5
P15	Female	Grade 10	Yes	4.2	4.7

Participants	Gender	Grades	Studied Tourism	IV Q9-Q13	DV Q4-Q8:Q14- Q18
P16	Female	Grade 10	Yes	4.4	4
P17	Female	Grade 10	Yes	2.2	3.2
P18	Male	Grade 10	Yes	3.4	4.6
P19	Female	Grade 10	Yes	5	5
P20	Female	Grade 10	Yes	1.4	1.8
P21	Male	Grade 10	Yes	1.6	4.6
P22	Female	Grade 10	Yes	4.2	4.8
P23	Female	Grade 10	Yes	3.6	3.8
P24	Male	Grade 10	Yes	3	4
P25	Male	Grade 10	Yes	3.4	3
P26	Female	Grade 10	Yes	4.2	4.3
P27	Female	Grade 10	Yes	3.2	3.9
P28	Female	Grade 9	Yes	4.4	4.8
P29	Female	Grade 9	Yes	3.8	3.8
P30	Male	Grade 9	Yes	4	4.4
P31	Female	Grade 9	Yes	4	4
P32	Female	Grade 9	Yes	4	4.5
P33	Male	Grade 9	Yes	3	3
P34	Female	Grade 9	Yes	4	3.9
P35	Female	Grade 9	Yes	3.6	3.7
P36	Male	Grade 9	Yes	4	4.2
P37	Female	Grade 9	Yes	3	3.6
P38	Male	Grade 9	Yes	3	3.4
P39	Male	Grade 9	Yes	3.6	3.6
P40	Male	Grade 10	Yes	3.6	4.1
P42	Male	Grade 10	Yes	3.4	4.1
P43	Male	Grade 10	Yes	3.4	4

Participants	Gender	Grades	Studied Tourism	IV Q9-Q13	DV Q4-Q8:Q14-Q18
P44	Male	Grade 10	Yes	3.8	4
P45	Female	Grade 10	Yes	5	4.9
P46	Female	Grade 10	Yes	4.8	4.3
P47	Male	Grade 10	Yes	3	3.5
P48	Male	Grade 9	Yes	4.4	4.4

Additionally, correlation analysis analyses the relationship between the independent variables (TESA) and the dependent variables (AST & ABST).

In the analysis of the relationship between the variables in this study, Spearman's Rank Correlation Coefficient was used. The reason for choosing this technique is that the data gathered via the questionnaire were based on a five-point Likert scale, and therefore, the resulting data would be ordinal data rather than interval or ratio data.

Spearman's correlation coefficient is a form of non-parametric statistic; thus, it is useful in the analysis of data when no assumption about the shape of the distribution can be made. As stated earlier, the purpose of this research study is to investigate the relationship between tourism education and sustainable tourism consciousness, and therefore, the use of this method is justified.

This technique is especially useful where the size of the sample population is quite small. Spearman's rank correlation coefficient was applied to examine the relationship between tourism education (TESA) and sustainable tourism awareness, attitude, and behaviour (AST & ABST), as the data were measured using a Likert scale. These metrics were ranked and the correlation was calculated using ranked data. The results indicated a strong positive relationship between the two variables.

The correlation coefficient (r) shown for the given data is 0.72, which enlightens strong relationships with the variables, meaning the two variables move together. This shows that an increase in tourism education of sustainability awareness (TESA) also increases the awareness, attitude, and behaviour of the secondary students (AST & ABST).

T-statistic Test

The t-statistic test for the correlation coefficient was formulated to test the statistical importance of the relationship.

$$t = r\sqrt{(n-2) / \sqrt{(1-r^2)}}$$

$$t = 0.72\sqrt{(44-2) / \sqrt{(1-0.72^2)}}$$

$$t = 7.027$$

The value of t shows ($t > 2$), a strong statistical importance of the relationship between the tourism education (TESA) and sustainable tourism awareness, attitude, and behavior (AST & ABST)

P-value

The p-value was formulated using the t-distribution and found to be less than 0.001 ($p < 0.001$), indicating that the relationship is statistically significant.

$P = 0.00000001041$

Since the p-value is less than 0.05, the result is statistically significant, which confirms that tourism education (TESA) and sustainable tourism awareness, attitude, and behaviour (AST & ABST)

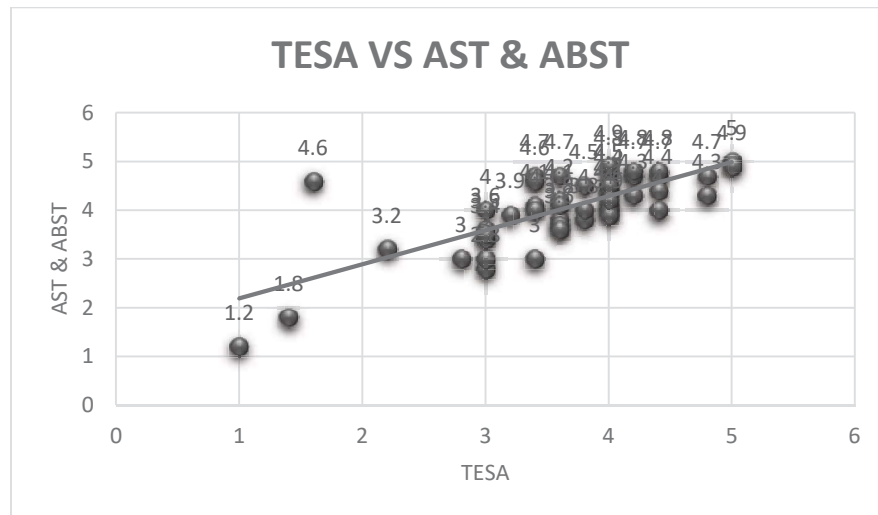


Figure 4: Linear relationship

Figure 4, Relationship between Tourism education of sustainable awareness and Awareness, attitude and behaviour towards sustainable tourism in linear regression.

Figure 4 shows how the TESA Likert scale shows a positive relationship with the AST & ABST. This indicates that Tourism education plays a vital role in creating the Awareness, attitude and behaviour towards sustainable tourism.

Inductive thematic analysis:

The open-ended question, Q19 “In your opinion, how can tourism education improve sustainable tourism in the Maldives?” collected responses from 48 participants. The data were analysed using inductive thematic analysis, and six major themes emerged. Among the participants P07, P41 are non-tourism students. Moreover P13, P17, P24, P25, P42 given irrelevant answers relate to the question. Therefore 41 participant’s data were coded.

The open-end quantitative data analyses by thematic analysis. Responses were rigorously reviewed multiple times to identify the meaning and ensure the reliable findings. All meanings were assigned to codes. Sub-themes were created from the codes, followed by themes and the percent of participants who provided the theme. Coding was done through the use of Microsoft Word and Microsoft Excel.

1. Open coding
2. Axial Coding
3. Final themes
4. Interpreting and presenting themes with supporting quotes

Table 9: Open Coding (Initial Codes from Responses)

Code	Meaning	Participant(s)
Awareness	Spreading awareness, increase awareness	P04, P06, P08, P10, P12, P14, P19, P21, P22, P23, P26, P29, P30, P31, P33, P34, P42, P44
Environmental protection	Protect the environment, reduce environmental impact, Long-term environmental conservation	P03, P19, P20, P26, P27, P32, P35, P36, P38, P43, P48
Marine conservation	Protecting marine ecosystems, protect coral reefs	P01, P36
Training staff	Training local stuff, Training tourism professionals can influence visitor behaviour	P01, P02, P27

Code	Meaning	Participant(s)
Practical learning	Sustainable activities- in Classroom, ways of using sustainability	P05, P11
Sustainability education	Learning sustainable, practices and encourage responsible tourism, fostering responsible tourism, support sustainable tourism, More sustainable	P11, P19, P27, P29, P45
Tourist education	To follow sustainable footsteps, Raising tourist awareness	P05, P23
Community tourism	Encourage community, to protect local communities, promoting community involvement.	P06, P19, P42
Cultural respect	Encouraging respect for local culture communities, respect local culture	P27, P 29, P33, P35, P36
Waste management	Improve waste management, reduce waste, to manage waste	P05, P32, P36
Resource management	Improve resources management, protect Maldives' natural resources in long-term, manage resources responsibly, preserving natural resources	P05, P21, P33,
Responsible behaviour	Encourage people to be more sustainable, fostering responsible behaviour, support local communities, responsible management, Protect local customs, leads to a responsible tourism, to manage sustainable tourism, to protect the local culture, Manage tourism responsibly, allow improvement in sustainable tourism	P16, P19, P20, P21, P23, P26, P28, P30, P35, P42, P43, P48

Code	Meaning	Participant(s)
Eco-friendly practices	Tourism eco-friendly, increase the transports to eco-friendly, reduce the pollution, tourism, eco-friendly products, promoting eco-tourism, providing eco-friendly products and services	P14, P16, P28, P42, P46
Economic sustainability	Economic growth, benefits the economy	P03, P27, P33
Future sustainability	Sustainable developments, Growth of sustainability, Support sustainable, Improve sustainability, For future tourism industry	P06, P08, P09, P14, P22
Policy/rules	Contribute to responsible standards, Re-enforcing rules, Environmental regulations, Follow the rules, to follow sustainable policies and innovation.	P06, P12, P26, P37, P42
Industry skills	Training sustainable practices, skilled workers, Creating responsible tourism workers, knowledge and skills	P15, P21, P23, P26
General learning	Plan, manage, and participate in tourism, Learn about sustainable tourism	P39, P47

Table 10: Axial Coding (codes to sub themes)

Sub Themes	Codes Included	Participant (s)	Total	Percentage
Awareness & Knowledge	Awareness, sustainability education, tourist education	P04, P06, P08, P10, P12, P14, P19, P21, P22, P23, P26, P29, P30, P31, P33, P34, P42, P44, P11, P27, P45 P05,	22	53%

Sub Themes	Codes Included	Participant (s)	Total	Percentage
Environmental Conservation	Environmental protection, marine conservation	P01, P03, P19, P20, P26, P27, P32, P35, P36, P38, P43, P48	12	29%
Training & Skills	Training staff, industry skills, practical learning	P01, P02, P27, P15, P21, P23, P26, P05, P11	9	21%
Community & Culture	Community tourism, cultural respect	P06, P19, P42, P27, P29, P33, P35, P36	8	19%
Resource Management	Waste management, resource management, eco-friendly practices	P05, P 32, P36, P21, P33 P14, P16, P28, P42, P46	10	24%
Responsible Behaviour	Responsible behaviour, policy/rules	P06, P12, P16, P19, P20, P21, P23, P26, P28, P30, P35, P42, P43, P48, P37	15	36%
Sustainability Outcomes	Economic sustainability, future sustainability	P03, P27, P33 P06, P08, P09, P14, P22	8	19%

Table 11: Final Theme (Sub theme to Final themes)

Final Theme	Sub theme	Percentage
Awareness and Education	Awareness & Knowledge	53%
Environmental Protection	Environmental Conservation	29%

Final Theme	Sub theme	Percentage
Training and Skill Development	Training & Skills	21 %
Community and Cultural Sustainability	Community & Culture	19%
Resource Management and Responsible Behaviour	Resource Management + Responsible Behaviour	60%
Long-term Sustainability	Sustainability Outcomes	19%

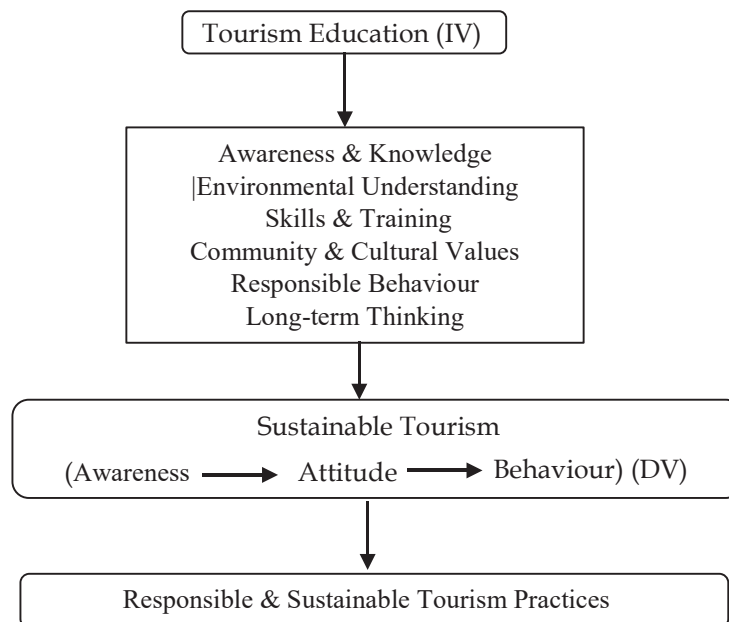
Thematic analysis interpretation

Variables

Independent variable (IV): Tourism Education

Dependent Variables (DV): Awareness, Attitude and Behaviour

Conceptual framework for qualitative research



The conceptual framework of the study illustrates that tourism education encourages the students' knowledge, environment understanding, skills, community & cultural values, responsible behaviour

and long term thinking. This enlightens them with awareness, which attitudes and behaviour change towards the sustainable & responsible tourism practices among the secondary students in Maldives. Therefore tourism education not only increases awareness but promotes the positive attitudes and responsible behaviours necessary for the tourism development.

Awareness, attitude and behaviour flow

Awareness: Students understand sustainability

Attitude: Students develop positive thinking (care for environment, culture)

Behaviour: Students act responsibly (reduce waste, protect reefs, and respect culture)

Table 12: Theme Connection to the DV component

Theme	DV Component
Awareness & Education	Awareness
Environmental Protection	Awareness + Attitude
Community & Culture	Attitude
Training & Skills	Behaviour
Resource Management	Behaviour
Long-term Sustainability	Attitude + Behaviour

Theme 1: Awareness and Education

Codes: awareness, sustainability education, tourist education

Connection to DV: Awareness

The important theme in this research is Awareness and Education (53 %), showing that half of the participants believe tourism education directly increases students' knowledge and understanding of sustainability concepts. This ensures that there is a strong connection between tourism education and awareness. This finding supports R.W. Butler (1999), who said education plays a significant role in increasing awareness of sustainability. Moreover, it is noted that H. M. Jaber & A. Marzuki (2019) mentioned tourism education increases awareness about sustainability among the students. Furthermore, the findings from the study carried out

by S. Al Hiti & N. Eltayib (2025) reveal that there is a significant relationship between tourism education and awareness.

Example quotes:

“Educate tourists so they become part of the solution instead of the problem.” (P02)

“Spreading more awareness.” (P04)

“Increase awareness among people about the importance of sustainability.” (P22)

Theme 2: Environmental Protection

Codes: environmental protection, marine conservation

Connection to DV: Awareness + Attitude

Environmental protection (29%), indicating that students become aware of environmental issues, e.g., coral reefs, ecosystems etc., and develop a positive attitude toward protecting them. This states the students' awareness about environmental protection through tourism education and changes their attitude in protecting them. This finding supports the point made by U. Sunlu (2003) about how tourism affects the environment and the need for education in promoting environmental protection awareness. Further, G. R. Sankhala (2025) highlights the importance of learning about environmental issues to promote positive attitudes. In addition to this, F. Cerri et al. (2024) highlight the ecological significance of fragile ecosystems such as mangroves in the Maldives.

Example quotes:

“Protecting marine ecosystems more carefully by hiring experienced marine biologists.” (P01)

“Protect the environment, particularly fragile ecosystems such as coral reefs.” (P27)

Theme 3: Training and Skill Development

Codes: training staff, practical learning

Connection to DV: Behaviour

The theme Training and Skill Development (21%) suggests that participants recognize that tourism education provides practical skills, enabling students to apply sustainable practices in real-life situations. This shows the practical skills and training necessity for sustainable practices through tourism education. According to R. R. Kunwar (2018), tourism education

creates practical skills and professional competency. Also, D. Lund-Durlacher (2015) mentions the significance of formal education in developing skills for sustainability. In addition, S. Dzitac et al. (2025) prove that education plays an important part in developing skills required for tourism development.

Example quotes:

“Train the people who run the industry every day.” (P02)

“Training sustainable practices in an effective way.” (P15)

Theme 4: Community and Cultural Sustainability

Codes: community tourism, cultural respect

Connection to DV: Attitude

Community and Cultural Sustainability (19%) highlights that some participants develop respect for local culture and communities, shaping their values and perspectives. This proves tourism education in promoting respect for local culture and community involvement. It is corroborated by UNESCO (2020). In addition, L. Meng et al. (2024) state that tourism ensures cultural sustainability. Moreover, M. A. M. Mir et al. (2024) mention that tourism education supports community development.

Example quotes:

“Promoting community tourism.” (P01)

“Respect local culture and support local communities.” (P33)

Theme 5: Resource Management and Responsible Behaviour

Codes: waste management, eco-friendly practices, responsible behaviour

Connection to DV: Behaviour

Resource Management and Responsible Behaviour (60%) is the most dominant theme among participants. This indicates that students strongly associate tourism with encouraging responsible actions, such as reducing waste and making eco-friendly decisions. This is based on the research conducted by S. S. Ramya & M. S. M. (2025), who indicate that awareness helps individuals adopt sustainable behaviour. In addition, according to Moisesescu, O. I et al. (2020), tourism education highlights sustainable performance and behaviour.

Example quotes:

“Improve resource management and waste management.” (P05)

“Reduce waste and manage resources responsibly.” (P33)

Theme 6: Long-term Sustainability

Codes: future sustainability, economic sustainability

Connection to DV: Attitude + Behaviour

Long-term Sustainability (19%) indicates that participants understand that tourism education develops a long-term mind set, encouraging students to think about future impacts and act sustainably over time. The findings provided by UNESCO (2020), which indicates that education helps achieve long-term sustainable development. Besides, M. Shareef (2025) argues that tourism education is essential for development of future sustainable perspectives.

Example quotes:

“Build sustainability literacy from school age (the long-term game-changer).” (P02)

“Encourage the younger generation to be more sustainable.” (P45)

Conclusion and its limitation

From this study, correlation $r = 0.72$ supports the hypothesis H1: Tourism education productively influences sustainable tourism awareness among secondary students in the Maldives. The validation methods like the T statistic test, P value and linear regression proves that tourism education positively impacts the sustainable awareness, attitude, and behaviour of the secondary students.

Students have exemplary awareness about concepts of sustainable tourism, harmful tourism activities for the environment, waste management, how sustainable tourism helps to protect local culture and the importance of coral reef protection. Students understand eco-friendly tourism businesses, protect the environment for the future, advice tourists to keep the rules and believe tourism education reduces environmental problems and promotes sustainable tourism in the Maldives. From the point of tourism education, they understand the concept of environmental protection and awareness about climate change and the need to protect natural resources, but tourism awareness will indicate more positive signs if it comprises experiential or empirical learning in the curriculum. TESA analysis helps us to develop the curriculum with more experimental ways to implant the sustainable tourism concept in the cognition of secondary students. Tourism lessons need to increase student awareness about climate change; hence, tourism education should focus more on climate change and

its impacts. School projects require augmenting relations with sustainable tourism; this can be secured by including it in the tourism education curriculum. The protection of natural resources should be encouraged in tourism education. The recommendation reviewed by the curriculum developer consequently states that students who enrol in tourism education will protect the environment as future tourism professionals and also promote it in the near future. Additionally, the induced thematic analysis states that the inclusion of the percentage analysis further proves that tourism education significantly boosts awareness (53%), its strong impact is reflected in responsible behaviour (60%). This shows that tourism education not only enhances the awareness among the students but also influences the behaviour pattern, making it a powerful tool for achieving sustainable tourism in the Maldives. The limitation of this study is that it's a study specific to four islands in the Maldives; here the result cannot be generalized. But this study contributes to recognizing the importance of tourism education in the curriculum for developing a sustainable future. This research sampling is based on purposive and convenience sampling, which limits the generalizability of the findings, as the sample may not fully represent the entire population. This method was chosen due to time and accessibility constraints in the Maldives. Evidence is limited to only tourism-studied students; the research gap is to conduct further study on the impacts of sustainable tourism among the secondary students, who can be separated into tourism-studied and non-tourism-studied.

Funding: This research did not receive any specific grant from the funding agencies in the public, commercial and non-for-profit sectors.

References

- Al Hiti, S., & Eltayib, N. (2025). The relationship between tourism management and sustainability education awareness: A new trend. *International Journal of Research in Innovative Social Sciences (IJRISS)*. <https://dx.doi.org/10.47772/IJRISS.2025.914MG00150>
- Butler, R. W. (1999). Sustainable tourism: A state-of-the-art review. *Tourism Geographies*, 1(1), 7–25. <https://doi.org/10.1080/14616689908721291>
- Cerri, F., Louis, Y. D., Fallati, L., et al. (2024). Mangroves of the Maldives: A review of their distribution, diversity, ecological importance and biodiversity of associated flora and fauna. *Aquatic Sciences*, 86, 44. <https://doi.org/10.1007/s00027-024-01061-2>
- Dzitac, S., Simut, R., Badulescu, D., Simut, C., & Badulescu, A. (2025). The role of education and digitalization in tourism development: Evidence

- for the European Union. *Technological and Economic Development of Economy*, 31(4), 1181–1205. <https://doi.org/10.3846/tede.2025.24388>
- Hasanova, G., & Safarli, A. (2024). Education for sustainable development: A review. [Journal Name], 2, 102–111.
- Jaber, H. M., & Marzuki, A. (2019). Improving awareness of tourism education among students in intermediate and secondary schools in the Kingdom of Saudi Arabia: Experts' social studies curricula point of view. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 10(3), 351–360. <https://doi.org/10.14456/ITJEMAST.2019.35>
- Kunwar, R. R. (2018). Tourism education, curriculum spaces, knowledge production, and disciplinary pluralism. *The Gaze: Journal of Tourism and Hospitality*, 9, 83–155. <https://doi.org/10.3126/gaze.v9i0.19724>
- Lund-Durlacher, D. (2015). Sustainable tourism education: An institutional approach. In *Sustainable tourism education*. Springer. https://doi.org/10.1007/978-3-662-47470-9_6
- Meng, L., Yan, F., Fang, Q., & Si, W. (2024). Research on the educational tourism development of intangible cultural heritage: Suitability, spatial pattern, and obstacle factor. *Sustainability*, 16(11), 4647. <https://doi.org/10.3390/su16114647>
- Mir, M. A. M., Shelley, B., & Ooi, C. S. (2024). Uses of tourism resources for educational and community development: A systematic literature review and lessons. *Tourism Management Perspectives*, 53, 101278. <https://doi.org/10.1016/j.tmp.2024.101278>
- Moisescu, O. I., Gică, O., & Coros, M. (2020). The impact of tourism education on tourism destination performance and sustainability. In *Sustainable tourism education*. Routledge. <https://doi.org/10.4324/9781003031765-10>
- Ramya, S. S., & M. S., M. (2025). Sustainable tourism practices: Awareness and adoption among young adults. *International Scientific Journal of Engineering and Management*, 4, 1–9. <https://doi.org/10.55041/ISJEM02570>
- Sankhala, G. R. (2025). Environmental issues and their impact on weaker sections. *International Journal of Novel Research and Development*, 10(2), c629–c640. <https://ijnrd.org/papers/IJNRD2502273.pdf>
- Shareef, M. (2025). Sustainability in tourism higher education: Perspectives of academics and students, pedagogical approaches, and institutional

- priorities in a neoliberal context. *The Maldives National Journal of Research*, 13(2), 78–95. <https://doi.org/10.62338/xnhqzq55>
- Sunlu, U. (2003). Environmental impacts of tourism. https://www.researchgate.net/publication/275349611_Environmental_impacts_of_tourism
- Suebwongsuwan, W., & Nomniam, S. (2020). Thai hotel undergraduate interns' awareness and attitudes towards English as a lingua franca. *Indonesian Journal of Applied Linguistics*, 9(3), 704–714. <https://doi.org/10.17509/ijal.v9i3.23221>
- Talukder, M. B., Swarna, D. A., & Afchar, M. N. (2025). Harnessing business intelligence for modern talent management. In *harnessing business intelligence for modern talent management* (pp. 325–348).
- UNESCO. (2020). *Education for sustainable development: A roadmap*. UNESCO Publishing. <https://unesdoc.unesco.org/ark:/48223/pf0000374802>
- Van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard*, 16(40), 33–36. <https://doi.org/10.7748/ns2002.06.16.40.33.c3214>
- Kesić, S., & Lipovšek, E. (2024). *Sustainability awareness in ESP*. In *Tourism and green investments (TISC 2024) conference proceedings* (p. 412). <https://doi.org/10.52370/TISC24412SK>