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THE ROLE OF HUMAN RESOURCE MANAGEMENT PRACTICES IN PROMOTING SUSTAINABLE TOURISM DEVELOPMENT: THE MEDIATING ROLE OF SUSTAINABLE LEARNING CULTURE IN THE ANDAMAN AND NICOBAR ISLANDS TOURISM INDUSTRY

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Abstract
This study aims to find out whether Human Resource Management (HRM) Practices, Organisational Culture and External Factors create Sustainable Learning Culture in tourism organisations of the Andaman and Nicobar Islands and whether it further promotes Sustainable Tourism Development. A structured questionnaire was filled by 210 employees of the hotels, resorts, travel agencies, tour operators, homestays and government tourism agencies across Port Blair, Havelock (Swaraj Dweep), Neil (Shaheed Dweep), North and Middle Andaman, Nicobar group of islands and other locations. Ten items, five-point Likert scales were used to measure all five constructs, with each scale exhibiting high internal consistency (Cronbach's α = 0.920 to 0.938). The three constructs of HRM Practices, Organisational Culture and External Factors together account for 27.3 per cent of the variance in Sustainable Learning Culture, as indicated by multiple regression. Sustainable Tourism Development, in turn, is significantly predicted by Sustainable Learning Culture ($\beta = 0.498$, $R^2 = 0.248$, $p < 0.001$). The results of the Sobel tests showed that HRM Practices ($z = 3.499$, $p < 0.001$), Organisational Culture ($z = 3.100$, $p = 0.002$) and External Factors ($z = 2.810$, $p = 0.005$) had significant indirect effects. All seven hypotheses are supported. The results indicate that the implementation of people-management systems and cultures that enable learning to be continuous, shared and sustainability-oriented can enhance sustainability outcomes for island tourism organisations.

keywords: Human Resource Management Practices, Organisational Culture, External Factors, Sustainable Learning Culture, Sustainable Tourism Development, Sobel Test and Andaman and Nicobar Islands.

1. Introduction

Tourism is a primary source of income and employment in island economies, but also exerts constant pressure on fragile coasts, forests, coral reefs and local communities. This tension is evident in the Andaman and Nicobar Islands. According to Chand et al. (2015), tourism is a major contributor to the island's gross state domestic product, which is approximately 56 per



cent and around 2.2 lakh domestic and international tourists visit the islands annually. Deka and Baruah (2022) mention that the two major industries of the islands are tourism and fishing and that approximately 80 per cent of the land is covered in forests, while fishing is allowed in the Andaman group but not in the Nicobar group. In such an environment, expansion is possible only when the organisations that provide the tourism service (hotels, resorts, tour operators, travel agencies, homestays and public agencies) manage their people and their practices responsibly. Sustainable Tourism Development (STD) is typically referred to as a policy objective for governments and destinations. But the satisfaction of visitors, the reduction of waste and energy, the creation of local jobs, the preservation of the cultural heritage and the engagement of the community are achieved daily by the people who work at the front desk, in housekeeping, in the kitchens and on tours. According to Baum (2015), human resource problems continue to be one of the most pressing problems of the world of tourism and the advancement of the tourism workplace has been uneven. The recruitment, training, appraisal, reward and involvement of tourism organisation's staff is therefore closely linked to whether sustainability is practised or merely stated. Sustainable behaviour is not a given with people-management systems. Employees also have to continue learning: sharing knowledge, learning from mistakes, implementing new eco-friendly practices and adapting to new regulations and shocks. This collective capacity is referred to as an organisation's learning culture by Marsick and Watkins (2003). When the learning is directed towards environmental, social and economic sustainability, it can be called a Sustainable Learning Culture (SLC). This study considers the mechanism of SLC as the link between HRM Practices, Organisational Culture and External Factors and Sustainable Tourism Development.

Statement of the problem

The tourism development in the Andaman and Nicobar Islands is expanding in an ecologically sensitive environment with inadequate infrastructure and reliance on a single sector. The sustainability indicators, status of ecotourism and livelihoods have been assessed in the islands earlier (Reddy, 2008; Chand et al., 2015) and tourist's perceptions of environmental sustainability on Havelock Island have been studied (Deka & Baruah, 2022). The following studies focus on the destination, the economy or the visitor. Little is known about the HRM practices, culture and external environment of the employees and organisations that provide tourism services on the islands, whether they support ongoing learning that is required for sustainable tourism and whether this learning actually leads to sustainable results.

Significance of the study

The study provides employee-level data from a remote, ecologically sensitive island destination where employee-level data is limited. It identifies the internal levers (HR practices and culture) that have the greatest impact on fostering a learning culture that supports sustainability for managers. It demonstrates to the island administration and tourism department how policies, incentives, infrastructure and community participation can lead to sustainability outcomes via what organisations learn. It tests a mediated model for



researchers, which connects HRM, culture and external environment to sustainable tourism via learning.

Objectives of the study

1. To examine the influence of Human Resource Management Practices, Organisational Culture and External Factors on Sustainable Learning Culture in the tourism industry of the Andaman and Nicobar Islands.
2. To assess the influence of Sustainable Learning Culture on Sustainable Tourism Development in the Andaman and Nicobar Islands.
3. To analyse the mediating role of Sustainable Learning Culture in the relationships between Human Resource Management Practices, Organisational Culture, External Factors and Sustainable Tourism Development.

2. Review of Literature

The review is restricted to peer-reviewed studies for which the DOIs have been verified in the publisher or library databases. It is structured by construction and by each path in the framework and ends with the hypotheses derived from the evidence.

Theoretical underpinning

The framework is based on the Ability-Motivation-Opportunity (AMO) perspective of HRM and on the learning-organisation theory. Jiang, Lepak, Hu and Baer (2012) categorized HR systems into three types: skill-enhancing, motivation-enhancing and opportunity-enhancing. They discovered that these practices have a direct and indirect impact on distal organizational outcomes via human capital and employee motivation. Renwick, Redman and Maguire (2013) combined environmental management and HRM under the term “Green HRM” using the same AMO lens. They observed that organisations are better informed about developing green skills and providing opportunities for people to be involved in green activities than about motivating employees to be involved in green activities. The mechanism is added by learning-organisation theory, which is presented by Marsick and Watkins (2003) with the Dimensions of the Learning Organization Questionnaire (DLOQ). It sees learning culture as a set of conditions (continuous learning, inquiry and dialogue, team learning, empowerment, embedded systems, connection to the environment and strategic leadership) that connect individual learning to organisational performance. These views imply that the outcomes of HR systems, culture and the external environment are primarily determined by altering what people learn and how they learn it.

Human Resource Management Practices and learning

Baum (2015) revisits the human resource challenges of global tourism, including low pay, weak career structures, skills shortages and the changing make-up of the workforce. He believes that these problems continue to exist in the face of tangible gains. In terms of learning, it implies that training, career development and fair rewards are not assumed to be present in tourism companies and when they are, they create a difference between organisations.

Kim, Kim, Choi and Phetvaroon (2019) found that in the hospitality sector, the implementation of green HRM (hiring eco-minded employees, environmental training and



rewarding the contribution of the employees to the environment) led to an increase in the organisational commitment of the employees and their eco-friendly behaviour, which in turn led to an improvement in the environmental performance of the hotel. In Human Resource Development Quarterly, Li, Gray, Lockwood and Buhalis (2013) explored the learning process of managing the business in the hospitality sector. Their work demonstrates that learning in this area is linked to the organisation and support of work. When read together, these studies indicate that HRM practices like training, participation, feedback and career development build the skills and opportunities that are the basis of a learning culture.

Organisational Culture and learning

Organisational culture (shared values, norms and behaviours) determines whether employees feel safe to share knowledge, challenge routines and try new things. Oriade, Osinaike, Aduhene and Wang (2021) conducted a study on hotel practitioners in developing countries. They discovered that there was a strong correlation between sustainability management practice and organisational culture and sustainability awareness of the employees and recommended to owner-managers to establish a strong organisational culture that promotes sustainability and empowers employees. Similarly, Marsick and Watkins (2003) focus on empowerment, dialogue and team learning as central to a learning culture. A culture of teamwork, openness, ethics, recognition and a sustainability orientation should therefore foster learning that focuses on sustainability.

External Factors and learning

Tourism organisations operate in the context of government policy, environmental regulations, infrastructure, community perceptions and economic shocks. Hall (2011) analysed sustainable tourism governance as a matter of policy learning. He said that learning to date has yielded primarily first and second order change (new indicators and settings) but not a change in the dominant growth paradigm; and that crises can catalyze deeper change. Gössling, Scott and Hall (2021) demonstrated the impact of COVID-19 on global tourism. They said that the crisis has highlighted the sector's fragility and questioned the volume-growth model, making resilience to external shocks a learning challenge. The situation in the community also plays a role. In Mauritius, another island destination, Nunkoo and Ramkissoon (2011) discovered that resident’s acceptance of tourism was influenced by perceived benefits and costs, community satisfaction, institutional trust and institutional power to influence tourism. External pressures and supports can then be used to encourage organisations to learn, adapt and integrate sustainability into their practices.

Learning culture and Sustainable Tourism Development

Sustainable Tourism Development is about visitor satisfaction, environmental protection, community benefit, cultural protection and long-term sustainability. Reddy (2008) created quick sustainability indicators and recommended a bottom-up approach with local knowledge for less developed islands of the Andaman and Nicobar Islands. That argument is based on the assumption of local learning capacity. Chand et al. (2015) reported that visitors to the islands appreciate natural landscapes, beaches, forests and coral sites, with outcomes that rely on the protection of these resources by local enterprises. Deka and Baruah (2022)



demonstrated that the tourist's perception of environmental sustainability factors should be taken into consideration in the formulation of sustainable tourism policy in Havelock Island. Organisational capability to put such knowledge into practice is learning culture. Kim et al. (2019) demonstrated that the eco-behaviour of employees is a key determinant of the environmental performance of hotels and Jiang et al. (2012) demonstrated that the impact of HR on outcomes is mediated by human capital and motivation. Thus, a learning culture that is oriented towards sustainability is expected to have a positive impact on sustainable tourism outcomes.

Research gap

The study is motivated by three gaps. First, the studies on green and sustainable HRM in the hospitality industry have primarily been conducted in the context of large hotels in mainland or international settings (Kim et al., 2019; Renwick et al., 2013). Little attention has been paid to small-island tourism systems with many small and family-run businesses. Second, learning culture is well known in the field of human resource development research (Marsick & Watkins, 2003), but has not been tested as a mediator between organisational antecedents and destination-level sustainability. Third, the internal (HRM, culture) and external (policy, regulation, infrastructure, community, shocks) factors are rarely studied together in a single model of employee-perceived sustainability in tourism.

Hypothesis development

The AMO evidence (Jiang et al., 2012; Kim et al., 2019; Renwick et al., 2013) suggests that HR practices create the skills, motivation and opportunities required for learning (H1). Culture evidence from hotels and learning organisations (Marsick & Watkins, 2003; Oriade et al., 2021) suggests that open, empowering and sustainability cultures are conducive to learning (H2). Governance, crisis and community research (Gössling et al., 2021; Hall, 2011; Nunkoo & Ramkissoon, 2011) suggests that external conditions stimulate organisational learning and adaptation (H3). Studies on island and hotel development (Chand et al., 2015; Kim et al., 2019; Reddy, 2008) suggest that the application of local learning has a positive impact on the outcomes of sustainability (H4). Based on the indirect-effect logic of Jiang et al. (2012), Sustainable Learning Culture is suggested as the mediator in each path (H5-H7).

Hypotheses of the study

- **H1:** Human Resource Management Practices have a significant positive influence on Sustainable Learning Culture.
- **H2:** Organisational Culture has a significant positive influence on Sustainable Learning Culture.
- **H3:** External Factors have a significant positive influence on Sustainable Learning Culture.
- **H4:** Sustainable Learning Culture has a significant positive influence on Sustainable Tourism Development.
- **H5:** Sustainable Learning Culture significantly mediates the relationship between Human Resource Management Practices and Sustainable Tourism Development.
- **H6:** Sustainable Learning Culture significantly mediates the relationship between



Organisational Culture and Sustainable Tourism Development.

- **H7:** Sustainable Learning Culture significantly mediates the relationship between External Factors and Sustainable Tourism Development.

3. Research Methodology

Research design

The study is descriptive and explanatory (causal) research design, which is a cross-sectional survey. It is quantitative and tests hypotheses of direct and indirect relationships between five constructs.

Population and sample

The population comprises of the employees of the tourism organisations in Andaman and Nicobar Islands comprising of hotels, resorts, travel agencies, tour operators, homestays and government tourism agencies. Employees were sampled using a non-probability convenience sampling technique, which involved reaching out to employees across island locations and organisation types. There were no missing values and 210 usable responses were analysed. The sample includes managers, supervisors, administrative staff and operational staff across seven departments in Port Blair, Havelock Island, Neil Island, North and Middle Andaman, Nicobar Islands and other areas.

Research instrument

Data were collected with a structured questionnaire in two parts.

- **Part A, demographic profile:** ten items covering gender, age, educational qualification, place of work, type of tourism organisation, designation, department, total work experience, monthly income and frequency of training participation.
- **Part B, study constructs:** fifty statements, ten for each construct, rated on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Table 1: Constructs, items and dimensions of the questionnaire

Construct	Role	Items	Dimensions captured
Human Resource Management Practices (HRM)	Independent (IV1)	HRM01-HRM10	Training and development; recruitment and selection; employee engagement; performance appraisal; compensation and benefits; career development; work-life balance; HR policy implementation; participation and feedback; well-being
Organisational Culture (OC)	Independent (IV2)	OC01-OC10	Innovation; teamwork; ethics and integrity; sustainability orientation; open communication; empowerment; adaptability; belongingness; recognition; respect and inclusiveness
External Factors (EF)	Independent (IV3)	EF01-EF10	Tourism policies; environmental regulations; regional economy; community participation; infrastructure; stewardship policies;



			incentives; tourist awareness; local economic benefits; resilience to shocks
Sustainable Learning Culture (SLC)	Mediator	LC01-LC10	Knowledge sharing; learning from mistakes; continuous improvement; development support; peer learning; experimentation; feedback; lifelong learning; mentoring; programme evaluation
Sustainable Tourism Development (STD)	Dependent	STD01-STD10	Visitor satisfaction; impact reduction; community benefits; heritage preservation; responsible promotion; eco-friendly products; community engagement; local employment; impact assessment; long-term sustainability

Reliability of the instrument: Cronbach's alpha was used to determine internal consistency. All of the scales were well above the standard cut-off of 0.70, allowing items within each construct to be averaged to create a composite score.

Table 2: Reliability statistics of the study constructs

Construct	No. of items	Cronbach's α	Mean	SD	Reliability
Human Resource Management Practices	10	0.920	3.010	0.868	Excellent
Organisational Culture	10	0.928	3.070	0.929	Excellent
External Factors	10	0.921	3.083	0.869	Excellent
Sustainable Learning Culture	10	0.921	3.074	0.893	Excellent
Sustainable Tourism Development	10	0.938	3.100	0.964	Excellent

Tools of analysis

1. **Percentage analysis** to describe the demographic profile of respondents.
2. **Descriptive statistics** (mean and standard deviation) for each construct.
3. **Pearson correlation** to examine bivariate associations.
4. **Multiple linear regression** (ordinary least squares) to test H1-H4. Multicollinearity was checked with variance inflation factors (VIF).
5. **Mediation analysis** following the causal-steps logic of Baron and Kenny (1986), with the significance of each indirect effect tested by the Sobel (1982) test. As a robustness check, 5,000-sample percentile bootstrap confidence intervals were also computed for each indirect effect.

4. Results and Interpretation

Demographic profile of respondents (percentage analysis)

Table 3: Demographic profile of respondents (N = 210)



Variable	Category	Frequency	Percentage (%)
Gender	Male	124	59.05
	Female	84	40.00
	Prefer not to say	2	0.95
Age (years)	Below 25	39	18.57
	25-30	50	23.81
	31-35	49	23.33
	36-40	38	18.10
	Above 40	34	16.19
Educational qualification	Diploma	32	15.24
	Undergraduate	74	35.24
	Postgraduate	67	31.90
	Professional qualification	23	10.95
	Others	14	6.67
Place of work	Port Blair	70	33.33
	North Andaman	29	13.81
	Middle Andaman	22	10.48
	Havelock Island	37	17.62
	Neil Island	22	10.48
	Nicobar Islands	14	6.67
	Other	16	7.62
Type of organisation	Hotel	74	35.24
	Resort	37	17.62
	Travel agency	33	15.71
	Tour operator	27	12.86
	Homestay	21	10.00
	Government tourism agency	18	8.57
Designation	Manager	28	13.33
	Supervisor	42	20.00
	Administrative staff	32	15.24
	Operational staff	89	42.38
	Other	19	9.05
Department	Human Resources	21	10.00
	Front office	41	19.52
	Housekeeping	20	9.52
	Food and beverage	36	17.14
	Sales and marketing	37	17.62
	Tour operations	33	15.71



	Administration	22	10.48
Total work experience	Below 1 year	24	11.43
	1-5 years	79	37.62
	6-10 years	58	27.62
	11-15 years	32	15.24
	Above 15 years	17	8.10
Monthly income	Below ₹15,000	45	21.43
	₹15,001-₹25,000	57	27.14
	₹25,001-₹35,000	53	25.24
	₹35,001-₹50,000	34	16.19
	Above ₹50,000	21	10.00
Training participation	Never	36	17.14
	Once a year	72	34.29
	Twice a year	67	31.90
	Three or more times a year	35	16.67

Note: Source: Primary data.

Interpretation: Male employees make up 59.05 per cent of the sample and female employees 40.00 per cent; 0.95 per cent preferred not to state their gender. The workforce is young to middle aged with 65.71 per cent being below 36 years, the largest being 25-30 years (23.81 per cent). It is also highly educated, with 67.14 per cent having an undergraduate or postgraduate qualification and another 10.95 per cent a professional qualification.

One-third of respondents (33.33 per cent) are in Port Blair, the administrative and tourism centre, followed by Havelock Island (17.62 per cent) and North Andaman (13.81 per cent). The Nicobar group, where the tourism is limited, accounts for 6.67 per cent. The top three categories of employment are hotels (35.24 per cent), resorts (17.62 per cent) and travel agencies (15.71 per cent). Operational staff form the largest designation group (42.38 per cent) and front office (19.52 per cent), sales and marketing (17.62 per cent) and food and beverage (17.14 per cent) are the largest departments.

The majority of the respondents (65.24 per cent) have experience of one to ten years. Monthly income is modest: 48.57 per cent earn ₹25,000 or less and only 10.00 per cent earn above ₹50,000. Training exposure is highly variable: 17.14 per cent have never been to a training programme, 48.57 per cent attend two or more times per year. The sample thus represents the major islands, organisation types and job levels of the industry.

Descriptive statistics and correlation analysis are used to analyze the data.Data analysis is done using descriptive statistics and correlation analysis.

Descriptive statistics and correlation analysis

Table 4: Means, standard deviations and Pearson correlations (N = 210)

Construct	Mean	SD	HRM	OC	EF	SLC	STD
HRM Practices	3.010	0.868	1				
Organisational Culture	3.070	0.929	0.248**	1			



External Factors	3.083	0.869	0.221**	0.059	1		
Sustainable Learning Culture	3.074	0.893	0.419**	0.334**	0.292**	1	
Sustainable Tourism Development	3.100	0.964	0.380**	0.285**	0.333**	0.498**	1

Note: ** Significant at the 0.01 level (two-tailed). Source: Primary data, computed.

Interpretation: All construct scores fall within the range of 3.01 to 3.10 on the five point scale. As a result, HRM practices, HRM culture, external support, learning culture and sustainable tourism development are rated as moderate, neither high nor low. There is ample scope for improvement on all aspects. The three antecedents are significantly and positively correlated with Sustainable Learning Culture. It has the highest correlation with HRM Practices (r = 0.419), followed by Organisational Culture (r = 0.334) and External Factors (r = 0.292). It is the construct that is most correlated with Sustainable Tourism Development (r = 0.498). The relationship between Organisational Culture and External Factors is almost non-existent (r = 0.059, p = 0.395), meaning that the external environment and internal culture are different influences. The correlation between independent variables is less than 0.25 and there is no indication of a multicollinearity problem.

Hypothesis testing: direct effects (H1-H4)

Table 5: Multiple regression - HRM Practices, Organisational Culture and External Factors on Sustainable Learning Culture (H1-H3)

Predictor	B	SE	β	t	p	VIF
(Constant)	0.727	0.278	-	2.615	0.010	-
HRM Practices	0.321	0.065	0.312	4.970	< 0.001	1.117
Organisational Culture	0.235	0.059	0.245	3.988	< 0.001	1.066
External Factors	0.214	0.063	0.208	3.421	< 0.001	1.051

Note: R = 0.523; R^2 = 0.273; Adjusted R^2 = 0.263; F(3, 206) = 25.80, p < 0.001. Dependent variable: Sustainable Learning Culture.

Interpretation: The model is important and accounts for 27.3 per cent of the variance in Sustainable Learning Culture. The values of all VIFs are near 1, indicating that there is no multicollinearity. HRM Practices is the strongest predictor (β = 0.312, p < 0.001): For every one unit increase in HRM practices, learning culture increases by 0.321 units, while other factors remain unchanged. Organisational Culture (β = 0.245, p < 0.001) and External Factors (β = 0.208, p < 0.001) are also significant and positive. H1, H2 and H3 are supported.

Table 6: Simple regression - Sustainable Learning Culture on Sustainable Tourism Development (H4)

Predictor	B	SE	β	t	p
(Constant)	1.446	0.208	-	6.962	< 0.001
Sustainable Learning Culture	0.538	0.065	0.498	8.289	< 0.001

Note: R = 0.498; R^2 = 0.248; Adjusted R^2 = 0.245; F(1, 208) = 68.70, p < 0.001. Dependent variable: Sustainable Tourism Development.



Interpretation: The contribution of Sustainable Learning Culture to Sustainable Tourism Development is 24.8 per cent. The learning culture is positively correlated with the perceived sustainable tourism development, with a correlation coefficient of 0.538. H4 is supported.

4.4 Mediation analysis (H5-H7)

In order to test mediation, three regression equations were tested, all three independent variables were entered together: (i) the total effect of HRM, OC and EF on STD (path c); (ii) the effect of HRM, OC and EF on SLC (path a, Table 4.3); and (iii) the effect of HRM, OC, EF and SLC together on STD (paths c′ and b).

Table 7: Total effect and outcome model - predictors of Sustainable Tourism Development

Predictor	Total effect c (B)	p	Direct effect c′ (B)	SE	β	t	p
HRM Practices	0.302	< 0.001	0.188	0.071	0.169	2.640	0.009
Organisational Culture	0.210	0.001	0.126	0.064	0.121	1.979	0.049
External Factors	0.289	< 0.001	0.213	0.067	0.192	3.179	0.002
Sustainable Learning Culture (b)	-	-	0.357	0.073	0.331	4.927	< 0.001

Note: Total-effect model: $R^2 = 0.248$, $F(3, 206) = 22.66$, $p < 0.001$. Outcome model with mediator: $R^2 = 0.328$, Adjusted $R^2 = 0.315$, $F(4, 205) = 24.98$, $p < 0.001$.

The addition of Sustainable Learning Culture increases the explained variance in Sustainable Tourism Development from 24.8 to 32.8 per cent ($\Delta R^2 = 0.080$). Learning culture is also the strongest predictor ($\beta = 0.331$). When the mediator is added, the coefficients of the antecedents remain significant. This is the pattern of partial mediation.

Table 8: Sobel test results for the mediating role of Sustainable Learning Culture

Hypothesis	Path	a (SE)	b (SE)	Indirect effect (a×b)	Sobel z	p	95% bootstrap CI	Proportion mediated	Result
H5	HRM → SLC → STD	0.321 (0.065)	0.357 (0.073)	0.115	3.499	< 0.001	[0.056, 0.188]	37.9%	Supported (partial)
H6	OC → SLC → STD	0.235 (0.059)	0.357 (0.073)	0.084	3.100	0.002	[0.036, 0.144]	40.0%	Supported (partial)
H7	EF	0.214	0.357	0.077	2.810	0.005	[0.028,	26.4%	Supported



	→ SLC → STD	(0.063)	(0.073)				0.137]		(partial)

Note: Proportion mediated = indirect effect ÷ total effect. Bootstrap: 5,000 resamples, percentile intervals.

Interpretation. Each indirect effect through Sustainable Learning Culture is significant, as all three Sobel z values are greater than the critical value of 1.96. The bootstrap confidence intervals agree, since none of them includes zero.

- **H5 (HRM Practices):** the indirect effect is 0.115 ($z = 3.499$, $p < 0.001$). Learning culture is a medium that transmits about 38 per cent of the impact of HRM practices on sustainable tourism development. The mediation is partial because the direct effect remains significant ($c' = 0.188$, $p = 0.009$).
- **H6 (Organisational Culture):** the indirect effect is 0.084 ($z = 3.100$, $p = 0.002$). This is the largest mediated share of the three (40 per cent). The direct effect is just significant ($c' = 0.126$, $p = 0.049$), which means that the culture effect is largely mediated by learning.
- **H7 (External Factors):** the indirect effect is 0.077 ($z = 2.810$, $p = 0.005$), with 26 per cent mediated. External Factors have the strongest direct effect of the three ($c' = 0.213$, $p = 0.002$). Policies, infrastructure and community conditions are thus directly and indirectly influencing sustainable tourism via organisational learning.

All three relationships are mediated by Sustainable Learning Culture and H5, H6 and H7 are supported.

5. Discussion

The findings are congruent with the suggested framework. Each of the three HRM Practices, Organisational Culture and External Factors contribute to the Sustainable Learning Culture, which is the strongest predictor of Sustainable Tourism Development. It also has a meaningful amount of the influence of each antecedent.

HRM Practices and learning (H1): HRM Practices had the highest correlation with learning culture ($\beta = 0.312$). This is consistent with the AMO meta-analysis of Jiang et al. (2012) that human capital and motivation were the mechanisms by which HR systems influenced outcomes. It also supports Kim et al. (2019) who concluded that green HRM in hotels increased eco-friendly behaviour. The descriptive results add context. Nearly half of the respondents earn ₹25,000 or less per month and 17 per cent have not received any training, indicating the continuing problems of the tourism workforce as described by Baum (2015). Employees report a significantly higher learning culture when their employers invest in training, appraisal, career development and participation.

Organisational Culture and learning (H2): Additionally, Organisational Culture predicted learning culture ($\beta = 0.245$) and 40 per cent of the effect of Organisational Culture on sustainable tourism was mediated by learning culture, which is the highest among the mediators in the model. The direct effect on STD was only slightly significant ($p = 0.049$). This reinforces the findings of Oriade et al. (2021) that hotel sustainability management is



related to organisational culture and Marsick and Watkins (2003) that emphasise the importance of empowerment, dialogue and team learning in a learning culture. In practice, culture seems to be relevant to sustainability primarily as a facilitator of learning.

External Factors and learning (H3): External Factors also had a significant positive effect on learning culture (β = 0.208) and had the largest direct effect on STD (c′ = 0.213). This dual role is appropriate for the island's context. Government policy and environmental regulation have direct impacts on sustainability outcomes, such as the permit system, waste systems and protected-area rules. They also encourage firms to learn and adapt, in line with Hall's (2011) definition of sustainable tourism governance as policy learning. Resilience to external shocks is perceived as a learning issue, perhaps because of the recent memory of COVID-19 that Gössling et al. (2021) found had stopped the world of tourism in its tracks. A near zero correlation between External Factors and Organisational Culture (r = 0.059) indicates that a supportive environment does not necessarily lead to a supportive internal culture. The two require individual attention.

Learning culture and sustainable tourism (H4): Sustainable Learning Culture accounted for a quarter of the variance in Sustainable Tourism Development alone and was the strongest predictor after controlling for all three antecedents (β = 0.331). This reinforces Reddy's (2008) demand for bottom-up and local-knowledge solutions to sustainability on the Andaman and Nicobar Islands. Organisations that share knowledge, learn from mistakes and evaluate learning are better equipped to safeguard the natural assets which attract tourists to the islands, as stated by Chand et al. (2015) and Deka and Baruah (2022).

Mediation (H5-H7): All three indirect effects were significant for both Sobel test and bootstrapping and all three mediations were partial. Learning culture is thus an important channel but not the exclusive one. Commitment, motivation, regulation and community relations are other pathways to sustainability that are not modelled here and are influenced by HRM practices, culture and external conditions. Despite this, the mediated shares of 26-40% indicate that learning culture has a significant share of each total effect. The mean scores around 3 on all constructs indicate that the island's tourism organisations are at an intermediate level and there is ample scope to work through learning in order to improve HRM and culture.

6. Conclusion

The study suggests that the concept of Sustainable Learning Culture is one of the crucial connections between the management of people by tourism organisations in the Andaman and Nicobar Islands and the sustainable development of tourism. The HRM Practices, Organisational Culture and External Factors together explain 27.3 per cent of the learning culture based on 210 employees. Learning culture is the most powerful predictor of Sustainable Tourism Development and partially mediates the effect of each antecedent. All seven hypotheses are supported.

Theoretical implications

The study builds on the AMO-based and Green HRM reasoning (Jiang et al., 2012; Renwick et al., 2013) by applying them to destination-level sustainability outcomes in a small-island



context. It sets a learning culture that is oriented towards sustainability as an explanatory mechanism (Marsick & Watkins, 2003). It also demonstrates that internal (HRM, culture) and external (policy, infrastructure, community, shocks) antecedents can be modelled simultaneously and that both have an impact on organisational learning, in part.

Managerial and policy implications

1. **Make training regular and sustainability-focused:** 17% of workers are not trained. Hotels, resorts and tour operators must conduct at least annual training in waste, energy, marine and forest protection and responsible guest communication.
2. **Link appraisal and rewards to learning and sustainable behaviour:** Acknowledge employees who share knowledge, recommend eco-improvements or mentor colleagues, as HRM was the most powerful factor in fostering a learning culture.
3. **Build an open, empowering culture:** The majority of the impact of culture on sustainability is mediated by learning. Managers should therefore foster open communication, teamwork and learning from errors without blame.
4. **Use policy as a learning lever:** The island administration and tourism department can match regulations and incentives with capacity building: workshops, certification support, shared good practice platforms, especially for small homestays and operators.
5. **Plan for resilience:** Planning for scenarios and cross-training for shocks like pandemics, extreme weather and transport disruption can create learning opportunities for the organisation.

Limitations and directions for future research

- The cross-sectional design restricts causal inferences. Claims of direction would be strengthened by longitudinal or multi-wave designs.
- Common method bias cannot be ruled out as all constructs were self-reported at one time. Manager ratings, guest data or objective environmental indicators could be added in future studies.
- The generalisation of the findings to all islands is limited by convenience sampling and the small proportion of the Nicobar group (6.67 per cent).
- The model is based on composite scores and observed-variable regression. Estimates would be improved by structural equation modelling with latent constructs, or multiple-mediator or moderated-mediation designs (e.g., by organisation type or training frequency).
- The partial mediation results suggest other mechanisms, including employee commitment, green motivation and community relations, that could be explored in future research in addition to learning culture.

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