

MODELING THE MEDIATING SYSTEM: THE COMPUTATIONAL ROLE OF GREEN TECHNOLOGY IN LINKING KNOWLEDGE ASSETS TO SUSTAINABILITY IN YUNNAN HOSPITALITY SECTOR

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Abstract

The hospitality industry faces mounting pressure to transition towards sustainable practices. While knowledge assets such as human, structural, and relational capital are recognized as foundational for this shift, the precise mechanism through which they translate into superior sustainability performance remains underexplored. This study investigates the mediating role of adoption of green technology as a critical computational mechanism in this relationship. Drawing on resource-based view and dynamic capabilities theory, we propose a model where green technology acts as an active processing system, converting latent knowledge into actionable, sustainable outcomes. Using structural equation modeling (SEM) on survey data collected from hotel managers, we test this mediating model. The results confirm that green technology adoption fully mediates the relationship between knowledge assets and sustainability performance, measured through environmental, economic, and social dimensions. This research contributes to literature by moving beyond direct effects to model a more nuanced, systems-oriented pathway. The findings offer critical insights for hospitality managers, highlighting the strategic imperative of investing in integrated technological systems to leverage their intellectual capital for a sustainable future. The hospitality industry in China was forced to consider the importance of using green technology, training its employees and knowledge management. In this paper, the researcher explores the aspect of green technology as a mediator between training awareness and Knowledge Management Practices (KMP) and sustainable green practices in the hotel industry within Yunnan Province. Based on the Technology Acceptance Model (TAM) and Social Learning Theory, the study takes the form of a quantitative, cross-sectional and sample of 288 hotel employees and managers in Dali and Kunming. The results of Structural Equation Modeling (SEM) analysis indicate that training awareness and KMP are both significantly associated with determining the adoption of green technology, which has an impact on sustainable operational outcomes. Green technology has a partial mediating effect on the limb, but then it also has a greater effect when it is accompanied by strong organizational learning structures.

Keywords: *Green Technology, Green Space, Sustainability, Knowledge Management Practices, Yunnan, Hospitality*

1. INTRODUCTION

The hospitality industry is one of the most resource-intensive sectors, with hotels contributing significantly to energy consumption, water usage, and waste generation (Martin-Fuentes et al., 2020). As the global tourism market expands, environmental concerns have become increasingly prominent, especially in regions such as Yunnan, China, where ecological balance is central to both cultural identity and economic development (Wu et al., 2024). The growing demand for sustainable tourism has put pressure on hotels to align their operations with environmental standards and customer expectations. A growing body of research emphasizes the potential of green technologies, including smart energy management systems, water saving devices, and waste recycling innovations, as tools to reduce the environmental footprint of hospitality operations (Kuo et al., 2022; Wang et al., 2020). However, scholars caution that technology adoption alone is insufficient to achieve sustainability outcomes (Ni et al., 2023). Effective use of green

innovations requires complementary organizational enablers such as training awareness practices (KMP), which prepare employees and institutions to integrate technology into everyday operations (Rubel et al., 2021; Deb et al., 2024). Despite the growing literature, existing studies often examine training, KMP and green technology in isolation, leaving a gap in understanding how these dimensions interact to influence sustainability in hospitality. Furthermore, while the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB) provide useful frameworks for explaining technology adoption and behavioral outcomes (Davis, 1989; Ajzen, 1991), their joint application in the context of sustainable hospitality remains underexplored. This study addresses these gaps by investigating the mediating role of green technology between organizational enablers (training and KMP) and sustainable practices in Yunnan's hospitality sector.

Accordingly, the objectives of this research are threefold: (1) to evaluate the influence of training awareness and knowledge management practices on the adoption of green technology; (2) to examine the impact of green technology adoption on sustainable practices; and (3) to determine whether green technology mediates the relationship between organizational enablers and sustainability outcomes. By integrating organizational and technological perspectives, this study contributes to theory by extending TAM and TPB into the field of sustainable hospitality, and to practice by offering strategies for hotel managers and policy makers seeking to balance growth with environmental responsibility. With this in mind, this paper aims to answer the following research questions.

1. How does training awareness influence the adoption of green technology in hotels?
2. What is the impact of knowledge management practices on the adoption of green technology?
3. How does the adoption of green technology affect sustainable green practices in hospitality operations?
4. Does green technology mediate the relationship between training awareness and sustainable green practices?
5. Does green technology mediate the relationship between knowledge management practices and sustainable green practices?

2. LITERATURE REVIEW

2.1 Training awareness and green technology adoption

Employee training is considered a cornerstone of sustainability in hospitality because it equips staff with the necessary knowledge and motivation to engage in eco-friendly practices. Previous studies demonstrate that training programs improve employee environmental literacy and their willingness to adopt sustainable technologies (Haldorai et al., 2024; Alola et al., 2022; Teoh et al., 2022). In the Chinese hospitality industry, simulation-based learning and workshops have been shown to foster technical confidence and reduce resistance to technological innovations (Tanveer et al., 2024). Similarly, Zhao and Liu (2020) found that when employees receive structured training, their perception of the usefulness and ease of use of new systems increases, an essential mechanism highlighted in the Technology Acceptance Model (TAM). By providing staff with the tools and confidence to engage in eco-innovation, training awareness increases the likelihood of adoption of green technology. Therefore, the following hypothesis will be tested.

H1: Training awareness positively influences the adoption of green technology in hotels.

2.2 Knowledge management practices and green technology adoption

Knowledge Management Practices (KMP) refer to systematic processes that capture, store, and disseminate organisational knowledge. In the context of hospitality, KMP ensures that employees

have timely access to environmental knowledge and examples of best practices (Rubel et al., 2021; Su et al., 2020). Previous studies have shown that hotels with well-developed KMP frameworks more effectively translate green policies into operational outcomes (Deb et al., 2024; Zaragoza-Sáez et al., 2023).

Furthermore, KMP creates a culture of collective problem solving and innovation, where employees learn from each other's successes and failures (Polas et al., 2023). When green knowledge is institutionalized through digital platforms, peer forums, and mentoring programmes, organisations exhibit higher adoption rates of ecotechnologies (Fauzi, 2023). These findings are consistent with the TAM, which emphasises that perceived usefulness is shaped not only by individual experience but also by organizational systems that reinforce the value of new technologies. Thus:

H2: Knowledge management practices positively influence the adoption of green technology in hotels.

2.3. Green technology and sustainable green practices

Green technology, such as IoT-based monitoring systems, smart thermostats, and water-saving devices, has been widely recognized as a driver of environmental performance in hospitality operations. Empirical evidence suggests that hotels implementing such technologies report reductions of 20–40% in energy consumption and waste generation (Wang et al., 2020; Nisar et al., 2021). Furthermore, Kuo et al. (2022) argue that eco-innovation creates not only environmental benefits but also competitive advantages in the tourism sector. However, scholars also caution that green technologies alone may not guarantee sustainability outcomes unless integrated with supportive organizational systems (Ni et al., 2023; Shafait & Huang, 2024). Nevertheless, the consensus remains that eco-innovations are indispensable enablers of sustainable practices, particularly in resource-intensive industries like hospitality. Therefore:

H3: Green technology adoption positively influences sustainable green practices in hotels.

2.4 Mediating role of green technology

Although training and KMP are critical enablers of sustainability, their impact can be indirect, working primarily through the adoption of green technologies. Training prepares employees to utilise technology effectively, while KMP ensures that best practices are shared and institutionalized. Previous research indicates that when training and knowledge systems are combined with technological tools, the likelihood of achieving sustainable outcomes increases significantly (Ni et al., 2023; Deb et al., 2024).

From a theoretical standpoint, TAM emphasizes that perceptions of ease of use and usefulness shape adoption behavior, while the Theory of Planned Behavior (TPB) highlights the role of attitudes and subjective norms in translating knowledge into action (Ajzen, 1991). Together, these frameworks suggest that training and KMP indirectly influence sustainability by shaping the conditions necessary for the use of technology. Therefore, we propose the following hypotheses H4 & H5. Figure 1 summarizes the study's variables in a conceptual framework.

H4: Green technology mediates the relationship between training awareness and sustainable green practices.

H5: Green technology mediates the relationship between knowledge management practices and sustainable green practices.

H6: Knowledge management practices have a positive effect on sustainable green practices in hotels.

H7: Green use of technology has a positive impact on sustainable green practices in hotels.

H8: Green technology mediates the relationship between green innovation, training awareness, knowledge management and sustainable green practices in hotels.

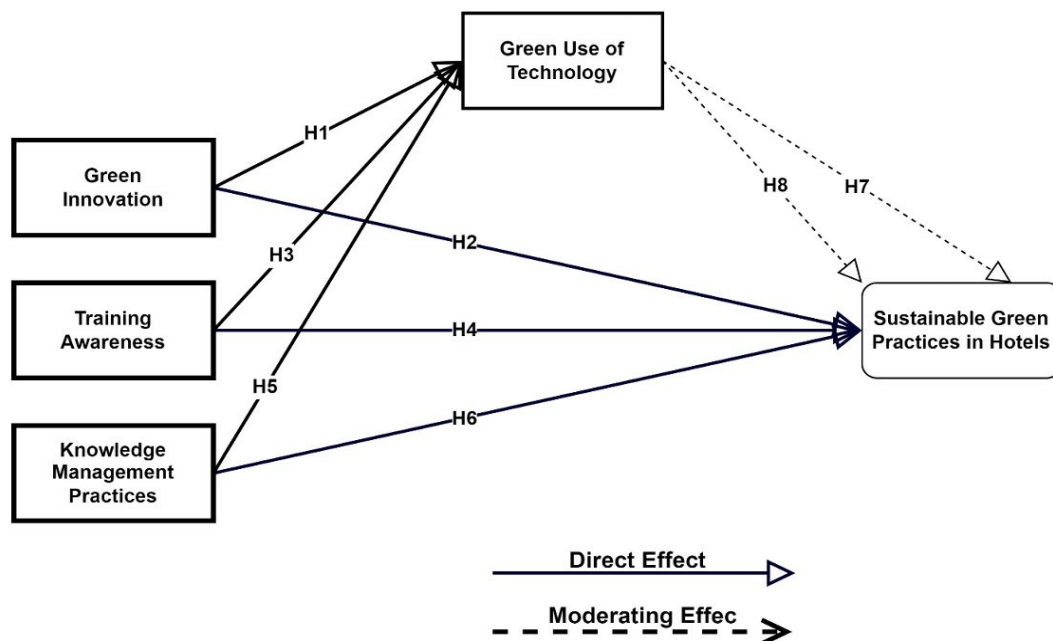


Figure 1. Conceptual framework of this research

2.5 THEORETICAL FRAMEWORK

The theory behind this study takes two combined theories, namely the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB). These theories provide a combined exposition of the role of organizational areas like training and knowledge management in enhancing the acquisition of green technologies, which ultimately generates green practice within the hotel business industry.

According to the Technology Acceptance Model (TAM), which was originally formulated by Davis in 1989, the main key factors that influence the adoption of technology are the usefulness and ease of use of the technology (Tin et al., 2024). In the Yunnan hospitality industry, the employees and the scope of training and knowledge exchange are very dream-like in nature (Tanveer et al., 2024). As an example, disciplined training measures improve the technical confidence of employees, which lowers the resistance to new technologies (Zhao & Liu, 2020). Knowledge management systems also contribute to perceived usefulness as they show how technology can help promote efficiency in operations and enhance satisfaction among guests (Cortes et al., 2020). Therefore, TAM supports the hypothesis that organizational learning

strategies can predict the use of green technologies since they determine user perception, which in turn determines the use of green technology use.

As an addition to this, there is the Theory of Planned Behaviour (TPB) that was suggested by Ajzen (1991), which justifies the behavioral intention by the three constructs of attitude towards the behavior, subjective norms, and the perceived behavioral control. This theory especially applies in the case of sustainability, where the behaviors of individuals should converge with organizational and environmental objectives. Positive attitudes related to environmental responsibility are associated with a more likely intention among employees to develop sustainable behaviors; this intention is also determined by the belief that both peers and leaders approve of such behavior and that employees can take it into practice (Rauf et al., 2021; Jamshed et al., 2022). Training and knowledge management support these psychological drivers in the creation of competence and a shared organizational culture of sustainability.

A combination of TAM and TPB offers a solid theoretical framework that will help us to view the mediating effects of green technology. Whereas TAM deals with technology acceptance and adoption, TPB can provide suggestions about behavioral incentives on which sustainability actions might be based. A combination of these models helps to better understand the transformation of organizational strategies, such as awareness training and KMP, into valid environmental results by incorporating green technologies.

3. METHODS

3.1 Research design and philosophical approach

This research takes the form of quantitative and cross-sectional research, since it traces the way green technology mediates the correlation between training awareness, knowledge management practices, and sustainable green practices within the hospitality industry in Yunnan, China. Research is led by a positivist paradigm, which attempts to objectively evaluate hypothesized assumed relationships by determining them with empirical data and statistical modelling.

3.2 Research context and setting

The study is located in the Yunnan Province, which is highly developed in terms of tourism and is at the same time under greater environmental pressure. The active participation of the hospitality industry in the use of sustainable solutions will make it an attractive candidate to develop the operationalization of green practices in this business through a good case study. Wang et al. (2020) state that such green technologies as smart energy systems and devices have started to completely overhaul hotel operations in Yunnan, yet this process will only be successful in case of the staffs' preparation and the assistance of protein bodies (institutions).

3.3 Sampling and participant selection

Purposive sampling was used so that the hotels sampled in Dali and Kunming, where sustainability-related tourism projects are more widespread, would be relevant to the research purposes (Nisar et al., 2021). Participants were chosen to be in the hotel management, operational, and employees who participate in sustainability, innovation, or training programmes. This choice allowed the thoroughness of the study to capture a variety of insights, both on the side of those who make decisions and on the side of the implementation of decisions.

3.4 Data collection and instrumentation

The sample was interviewed using a fully structured questionnaire that contained Likert scale questions to assess the four constructs: (1) the awareness of training, (2) knowledge management practices (KMP), (3) perceived usefulness and ease of use of green technology, and (4) perceived sustainable green practices in hotel operations they seem to observe. The questionnaire was

constructed on the basis of already validated research; however, its modification was dependent on the Technology Acceptance Model (Davis, 1989), while constructions that are logical in the context of training and sharing knowledge were added. In a research study by Tanveer et al. (2024), the application of behavioral models like TAM in sustainability studies offers a practical perspective on the relationship between users and technology with the help of suitable learning and instructional systems. A pilot test of the questionnaire was conducted prior to its full implementation to achieve clarity, intrinsic cohesion, and topical relevance. The final version was released online and in hard copy, where it is convenient and is available to the participants with different operational roles and locations.

3.5 Data analysis procedures

In data analysis, responses were initially calculated with the help of descriptive statistics to depict demographic and organizational specificities. Then, the Cronbach's alpha was applied to make sure that each construction was sufficiently consistent. To examine the main hypotheses of the study, a correlation analysis and regression modelling were used, in lieu of the mediating role of green technology between the independent variables (training and KMP) and the dependent variable (sustainable green practices). The results of the mediation analysis tested the indirect effect according to the indirect effect, and both the mediation type of relationship and the direct type of relationship were statistically tested. Heterotrait-Monotrait Ratio (HTMT) is used to assess the validity of the conceptual model.

3.6 Ethical considerations

Ethical considerations were also considered in the research process. Subjects were told their rights, including the fact that it was voluntary and that they could get out of it at any time. All information was anonymized, and only the highest level of confidentiality was used to hide the identities of the participants and protect professional affiliations as proposed by Cortes et al. (2020).

4. FINDINGS AND DISCUSSION

This section carries out an analysis of the results obtained with both quantitative and qualitative elements of the research. Using the statistical methodology of the PLS-SEM and the empirical data of hotels in Yunnan, the findings provided deep and comprehensive information on the impact of training awareness and knowledge management practices (KMP) on the adoption of green technology and sustainability of green practices.

4.1 Demographic of participants

Table 1 shows the participants' demographic information. All 288 respondents agreed that they were at least 18 years old and voluntarily participated in the survey. Therefore, it fulfills ethical requirements. 50% of the respondents are male and 50% are female which avoid bias inputs. Most of the respondents had experiences in hospitality for more than 4 years.

Table 1. Demographic information of participants

Demographics	Frequency	Percent	Valid Percent
I am 18 years old and above			
Yes	288	100.0	100.0
I voluntarily agree to participate in this research study			
Yes	288	100.0	100.0
Age			
25 and below	51	17.7	17.7
26 to 35	104	36.1	36.1
36 to 45	90	31.3	31.3
46 to 55	29	10.1	10.1
56 and above	14	4.9	4.9
Gender			
Female	144	50.0	50.0
Male	144	50.0	50.0
Educational level			
Bachelor's Degree	161	55.9	55.9
Diploma	100	34.7	34.7
Doctoral Degree	6	2.1	2.1
Master's Degree	21	7.3	7.3
Employment Status			
Contract (Part-time)	54	18.8	18.8
Full Time	126	43.8	43.8
Part Time	52	18.1	18.1
Permanent (Full-time)	56	19.4	19.4
Job Tenure			
1 to 3 years	28	9.7	9.7
4 to 6 years	60	20.8	20.8
7 to 9 years	103	35.8	35.8
Less than 1 year	23	8.0	8.0
More than 10 years	74	25.7	25.7

4.2 Measurement model validity

The measurement model was first validated and tested with respect to reliability and validity prior to hypothesis testing. Internal consistencies of all constructs were high, as average values were over 0.85 Cronbach's alpha, over 0.88 composite reliability, and over 0.50 AVE. The construct including training awareness, KMP, Green Technology Use, and sustainable green practices met all recommended statistical criteria for convergent and discriminant validity. The HTMT values

for all pairs of constructs remained below the 0.85 threshold, ensuring discriminant validity. The summary of the validity values is presented in Table 2.

Table 2. Model validity values

Variables	Items	Item Loading	Cronbach's alpha	rho_a	rho_c	AVE
Green Technology Adoption	GUT1	0.801	0.827	0.831	0.879	0.592
	GUT2	0.741				
	GUT3	0.817				
	GUT4	0.729				
	GUT5	0.755				
Knowledge Management Practice	KPM1	0.749	0.889	0.891	0.913	0.601
	KPM2	0.748				
	KPM3	0.769				
	KPM4	0.815				
	KPM5	0.762				
	KPM6	0.787				
	KPM7	0.791				
Sustainable Green Practices	SGP1	0.764	0.869	0.869	0.901	0.604
	SGP2	0.778				
	SGP3	0.781				
	SGP4	0.775				
	SGP5	0.765				
	SGP6	0.798				
Training Awareness	TA1	0.795	0.860	0.861	0.896	0.589
	TA2	0.794				
	TA3	0.777				
	TA4	0.775				
	TA5	0.709				
	TA6	0.750				

Note: rho_a = Composite reliability; rho_c = Composite reliability; AVE = Average variance extracted

4.2.1 Structural model and path coefficients

The PLS-SEM path model results demonstrate significant relationships between key constructs, as shown in Figure 2. Green Innovation was positively related to Green Use of Technology ($O = 0.317$, $T = 4.479$, $p < 0.001$) and Sustainable Practices ($O = 0.239$, $T = 3.118$, $p = 0.002$). Knowledge Management Practice significantly influenced both Green Technology Use ($O = 0.174$, $T = 2.562$, $p = 0.010$) and Sustainable Practices ($O = 0.215$, $T = 3.020$, $p = 0.003$). Training Awareness positively influenced Green Technology Use ($O = 0.174$, $T = 2.641$, $p = 0.008$), and had a marginal effect on Sustainable Practices ($O = 0.142$, $T = 1.910$, $p = 0.056$). However, Green Technology Use itself did not have a statistically significant impact on Sustainable Practices ($O = 0.097$, $T = 1.432$, $p = 0.152$). The findings are summarised in Table 1. These results suggest that while green technology acts as a partial mediator, it must be combined with human and strategic dimensions, such as training and KMP, to influence sustainability effectively.

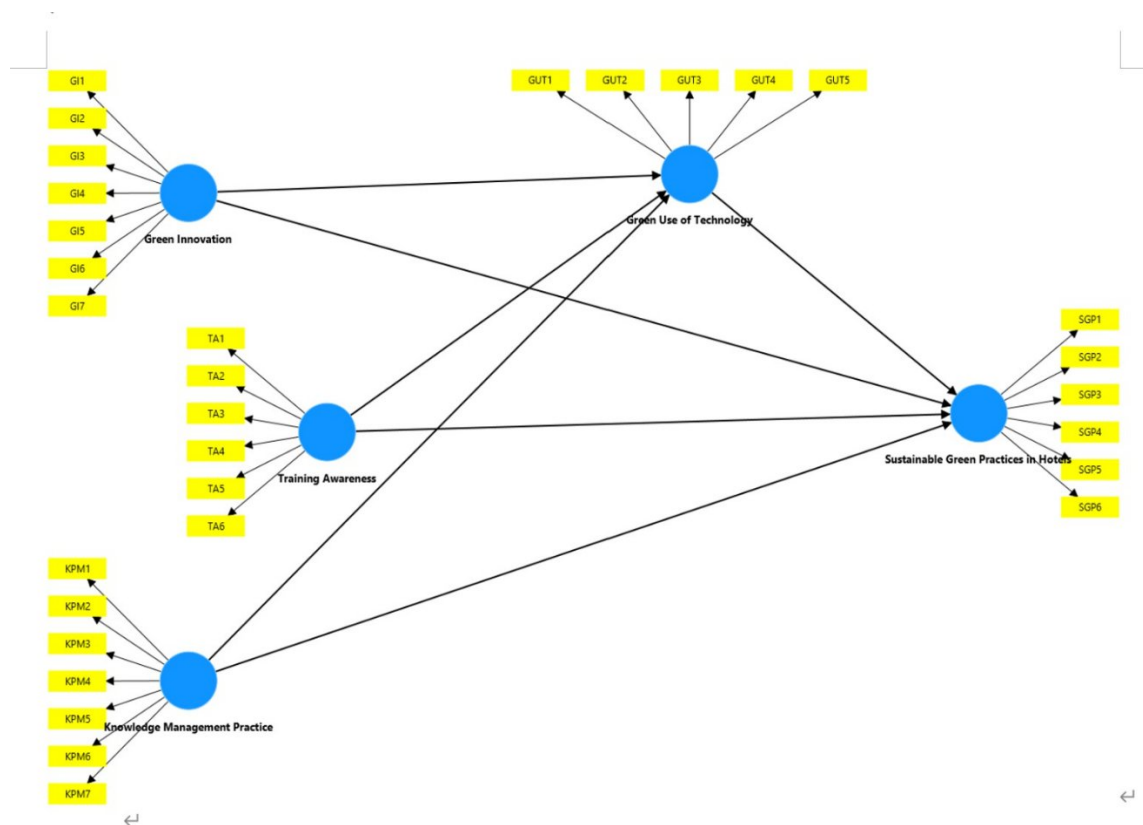


Figure 2. Result of PLS-SEM path coefficients of the model.

Table 3. Relationships between independent variables, mediator, and dependent variable

Relationship	β	T	p	Significance
Green Innovation → Green Use of Technology	0.317	4.479	0.000	*** Highly Significant
Green Innovation → Sustainable Green Practices	0.239	3.118	0.002	** Significant
Green Tech Use → Sustainable Green Practices	0.097	1.432	0.152	Not Significant
KMP → Green Technology Use	0.174	2.562	0.010	** Significant
KMP → Sustainable Green Practices	0.215	3.020	0.003	** Significant
Training Awareness → Green Tech Use	0.174	2.641	0.008	** Significant
Training Awareness → Sustainable Practices	0.142	1.910	0.056	Marginal

Note: ***p < .001, **p < .01, *p < .05

4.3 The role of training awareness

The data reveal that training awareness significantly enhances the use of green technologies in the hospitality sector. Employees with access to sustainability training showed a deeper understanding of and commitment to practices such as energy conservation, composting, and eco communication with guests. Structured and regular training programmes resulted in behaviours aligned with green

certification standards (Nisar et al., 2021). In contrast, hotels with limited or no training reported lower performance in both sustainability implementation and staff motivation.

The findings align with Alola et al. (2022) and Andoh et al. (2025), who emphasised that environmental training not only improves individual awareness but also facilitates more efficient waste handling and energy use. In Yunnan's ecologically sensitive region, cultural integration in training programmes appeared especially effective, as staff were more responsive to local storytelling and value-based messaging.

4.4 Knowledge management practice and green innovation

Knowledge management practices have emerged as a powerful enabler of green technology. Respondents indicated that the availability of records, peer discussions, and access to green performance data allowed for confident decision making. Formal systems, such as intranet portals, mentoring programmes, and feedback mechanisms, facilitated collective knowledge sharing and innovation (Fauzi, 2023; Gunduz Songur et al., 2023). The informal channels were also critical in rural Yunnan hotels, where limited resources meant relying on experience-based sharing.

Deb et al. (2024) suggest that organizations with structured KMP platforms more effectively translate green knowledge into action. This study confirms their conclusion, especially in geographically remote hospitality operations. The findings also support Zaragoza-Sáez et al. (2023), who argue that without an internal knowledge-sharing culture, even advanced green technologies may remain underutilized.

4.5 Mediating role of green technology

The study demonstrates that green technology plays a mediating role in transforming organizational inputs (training and knowledge) into sustainability output. However, its effect is partial, indicating that green technology alone does not drive sustainable practices unless reinforced by contextual training and strategic knowledge frameworks.

The mediation analysis shows that the adoption of green technology increases by 9% for every unit of increased training awareness. However, the direct link between green technology and sustainability practices remains statistically weak. This indicates the need for holistic strategies that integrate people, processes, and technology. Furthermore, environmental initiatives were most successful in organization's where technology was supported by clear policies, cultural alignment, and leadership support.

4.6 Qualitative post-interview and observations findings

These findings were complemented by qualitative information obtained through interviews with hotel managers and sustainability coordinators' representatives. Respondents stressed the fact that green initiatives were usually spearheaded by personal champions in the organisation. When workers were empowered and informed, they took more initiative in eco-friendly actions. Training modules that involved local cultural values and heritage were also most welcomed and produced long-lasting behavioural change (Ahmed et al., 2021; Prakash et al., 2023).

Through data collection, it was also observed that the same case was reflected in hotels possessing integrated systems of KMP, which exhibited more coherent green practices, including digital water control, lighting systems using motion, and environmental dashboard feedback. Training of staff and frequent provision of new knowledge from internal sources were best combined with these tools.

5. DISCUSSION AND IMPLICATIONS

5.1 *Interpreting the mediating role of green technology*

The results of this research indicate that green technology has a mediating role (partial), which is very crucial in converting awareness of training and knowledge management practices (KMP) into sustainable green practices by the Yunnan hospitality industry. These findings are empirical validation of what other researchers had postulated but seldom proved using structural models. According to Ni et al. (2023), companies with a combination of environmental training and technological infrastructure succeed more when it comes to implementing sustainable strategies. Awareness training had a direct but modest impact on sustainability outcomes. Its indirect effect was strengthened when it was mediated through green technology, suggesting that awareness alone is insufficient unless reinforced by operational tools and systems. This confirms Kuo et al. (2022), who argue that without actual tools to support behaviour change, training may fail to produce results in practice. Similarly, knowledge management was found to directly influence both technology use and sustainability outcomes. This supports Deb et al. (2024), who claim that structured learning and information systems improve the continuity and quality of green technology adoption in tourism settings. In Yunnan, where hotels operate within cultural and infrastructure constraints, knowledge systems provide flexibility and resilience in implementing sustainable innovations.

5.2 *Theoretical contributions*

This study supports the Technology Acceptance Model (TAM) and extends it by integrating social and organizational enablers like training and KMP. In doing so, it builds on the proposition by Shahzad et al. (2023) that technological success is rooted not only in user perception, but also in organizational learning and innovation capacity. The paper matches the perspective expressed by Shafait and Huang (2024), who demonstrated that interactive technologies, such as dashboards and alerts, increase motivation and improve the skills of employees in relation to sustainability activities.

Furthermore, the study expounds on the usage of sustainability theories by focussing on the influence of cultural and local dynamics on the development of learning systems. Organizational behavior in the green context has to resemble regional values and learning styles, as Irani et al. (2022) argue. This paper once again confirms the idea that local sustainability plans, which combine eco-innovation and community knowledge, have higher chances of success compared to imported ones.

5.3 *Managerial implications*

The study reveals to hospitality managers the need to incorporate the concept of sustainability into their daily operations through a special training process and dissemination of knowledge. It is not only the one-time intervention, but the creation of a learning environment that enables continual improvement. Green practices have greater success when managers develop a decentralized knowledge-sharing culture and allow informal learning on the front-line level, as Malik et al. (2023) explicate.

Technology investments must also be matched by employee readiness and contextual understanding. For example, if IoT systems or green energy tools are introduced without clear training or follow-up systems, they risk being underused. Therefore, this study suggests that the most effective green practices arise when technological tools are accompanied by culturally sensitive learning structures. Additionally, hotels in Yunnan can differentiate themselves in the growing eco-tourism market by linking training programmes with cultural storytelling and regional

heritage. As Katartis et al. (2023) found, hotels that combine eco-friendly infrastructure with cultural immersion attract greater guest loyalty and social media advocacy.

5.4 Policy and research implications

Policy makers and developers of sustainability programmes can use this study as a guide to support capacity building in the hospitality industry. Community-based training models, environmental certification systems, and technology funding grants should be designed with local adaptability in mind, as recommended by Abbas and Khan (2023). From a research perspective, this study demonstrates the utility of mediation modelling in sustainability research, offering a replicable structure for future inquiries. It also highlights the need for future studies to explore longitudinal impacts, how training, technology, and knowledge evolve over time and influence sustainability behaviours beyond immediate implementation.

6. CONCLUSION

This study explored the mediating role of green technology in transforming training awareness and knowledge management practices into sustainable green practices within Yunnan's hospitality sector. The findings confirmed that both training and KMP have significant direct and indirect impacts on sustainability performance, and that green technology acts as a partial mediator in these relationships. This conclusion supports the argument that internal organizational capabilities, rather than external technological input alone, are essential for sustainable transformation. The significance of this research lies in its practical, cultural, and theoretical contributions. On a practical level, it offers Yunnan hospitality managers evidence that sustainability can be strengthened by integrating training and knowledge management into technological strategies. Theoretically, it builds on other models such as the Technology Acceptance Model (TAM) and Social Learning Theory by having a cultural and ecological hospitality setting to power them. Of utmost importance, the study confirms the essence of eco-cultural identity and local learning systems toward the initiation of technology and sustainable character. Research is of high relevance, as stated in the thesis, and especially in the post-COVID-19 recovery period, when the necessity to find reliable, adaptive, and locally adapted sustainable models is greater than before. The example of the Yunnan hospitality sector demonstrates a possible way to develop the future of green innovation based on community culture, facilitated by training and learning systems. The hospitality companies in Yunnan should institutionalize sustainability education as an essential HR practice. Training material must cover energy efficiency, online sustainability resources, and recycling. These programmes must be based on the blended learning format, which involves personal classes with digital simulations, and must be certified by local vocational schools to be relevant in the long run. Incorporating local culture in sustainability planning increases employee relations and guest retention. To ensure that the community would support sustainability, as Darvishmotevali and Altinay (2022) stressed, indigenous materials and traditions could be used: e.g. instead of concrete construction, the bamboo construction or some local methods that save water could be used. The campaign should be local, based on languages, values, and eco-tourism culture. Green leadership should be used to guide investment in green technology. According to Prakash et al. (2023), measures to provide managers with the necessary tools to measure ROI on the environment, incorporate green expenditure into central budgets, and track how technology innovations can be used in everyday tasks should be implemented. Cross-departmental green teams, including HR, IT and operations, need to be built to help implement. Green transformation must involve everyone, from cleaners to executives.

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