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The Efficacy of CHSE Certification within Sustainable Tourism in Post-Pandemic: Facts from Indonesia

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Abstract: By observing the recovery process of the tourism industry in Indonesia after COVID-19, this study explores the relationship between cleanliness, health, safety, and environmental sustainability (CHSE) training on workforce competency, service quality, and tourist satisfaction. This training is a prerequisite for obtaining a CHSE certificate, recognizing best practices in four fields. This study employed a sample size of 345 respondents and utilized partial least squares-path modelling to conduct path analysis. The analysis process was carried out in several stages: testing direct relationships, two-segment and three-segment mediation relationships, and additional analysis by classifying observations based on industry type. CHSE certification significantly impacts the development of green tourist attractions, improving the image of the tourist attraction industry on social media and increasing tourist visits. This study also guides countries struggling to revive their tourism industries following the COVID-19 outbreak. This study focuses on observations of CHSE certification, which is a comprehensive guarantee of best practices covering the areas of cleanliness, health, safety, and environmental sustainability.

Keywords: CHSE certification, training, competency, service quality, tourist satisfaction.

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INTRODUCTION

The COVID-19 pandemic has harmed the sustainability of the global tourism industry, primarily due to restrictions put in place by each country's government on local community activities (Abbas et al., 2021; Goh, 2021; Cai et al., 2023). The significant decrease in tourist numbers has led to a major decline in revenue for various tourism institutions, resulting in financial challenges and potential insolvency (Santos & Moreira, 2021; Huang et al., 2021). This issue persists in the present era, particularly in developing countries. According to a study conducted by Wickramasinghe & Naranpanawa (2023), the tourism sector in developing countries has experienced a notable decrease in profitability following the COVID-19 pandemic due to a substantial reduction in the number of international tourists visiting these countries. Nonetheless, Nguyen et al. (2023) reveal a unique

incident in Vietnam which shows that strict government policies regarding quarantine and social exclusion can successfully overcome the problem of COVID-19, which in turn can foster public confidence to travel again. This phenomenon implies that strict regulations implemented by a country's authorities and supported by community compliance in combating the COVID-19 problem during the pandemic will favourably impact the tourism industry's resilience after the pandemic.

Sharma et al. (2021) suggests that the revival of the tourism industry following the onset of the COVID-19 pandemic relies on various factors, including government involvement, technological advancements, indigenous ownership, and the cultivation of trust among consumers and employees. The primary emphasis of these four elements lies in the function of government. Nevertheless, the findings of Bulchand-Gidumal (2022) study indicate that several factors purported to impact the situation are only rhetorical, as their efficacy has yet to be substantiated within the context of Spain. Sánchez-Sánchez & Sánchez-Sánchez (2023), on the other hand, present alternative information indicating that the Spanish government has enacted a Temporary Employment Regulation (ERTE) requiring enterprises to continue employing their employees even if their working hours are shortened during the COVID-19 pandemic. Similarly, in the region of Macau, located in China, the local government has implemented measures to improve the governance of tourist destinations by collaborating with private enterprises, particularly in the context of post-COVID-19 rehabilitation (Wan et al., 2022). Several of these studies offer evidence that government involvement plays an essential role in shaping the extent to which the tourism industry can effectively recover from the impact of the COVID-19 pandemic. This study examines the impact of the Indonesian government's policy of providing cleanliness, health, safety, and environmental sustainability (CHSE) certification for the tourism industry during COVID-19 on the industry's resilience during the post-COVID-19 era.

Tourism industry certification initiatives are an effective strategy for improving corporate value. According to a study conducted in the United Kingdom, green certification has brought numerous benefits to the tourism industry, including improved environmental sustainability, financial performance, marketing potential, and corporate image. A Medellin, Colombia study discovered that certification in the tourism sector significantly impacted good tourist views (Aïdi & Fabry, 2022). This finding is corroborated by research by Xue et al. (2023), which demonstrates how environmentally friendly certification in the tourism business increases tourist interest. However, a Chinese study discovered that tourist sector certification does not improve enterprises' economic performance after COVID-19 (Chi et al., 2022). The existence of a gap between these studies is the theoretical basis for this study in observing CHSE certification policies in Indonesia.

Reports from the Ministry of Tourism and Creative Economy of the Republic of Indonesia/MTE show that the Indonesian government has successfully maintained the tourism industry through CHSE certification (MTE, 2020; 2021). As a prime example, one of Indonesia's provinces, East Java, has increased the number of foreign tourist visits from 689 in 2020 to 67,793 in 2022 (Central Bureau of Statistics /BPS, 2022). Along with the increase, 851 well-known tourism businesses in East Java have been granted CHSE credentials (https://chse.kemenparekraf.go.id/en, accessed July 23, 2023). Based on this data, the study asks, "Does CHSE certification work for increasing tourist arrivals?". This study will investigate the efficacy of CHSE certification in more depth by focusing on aspects such as CHSE training, competency of tourism industry operators, service quality, and tourist satisfaction. Subsequently, this study will synthesize by integrating its analysis findings with pertinent literature from diverse sources to address the research questions.

The COVID-19 pandemic has affected individual behaviour shifts, with a greater emphasis on prioritizing hygiene, health, safety, and environmental protection. This observation suggests that CHSE training is essential for tourism businesses to fulfil customers' demands. Previous studies have indicated that training enhances

the technical and general competence of tourism business operators, enabling them to effectively manage tourism enterprises in alignment with customer's preferences (Bhattacharya et al., 2023). Meanwhile, studies conducted within the hospitality sector have demonstrated that employee training is the most effective means of enhancing their abilities and competencies, ultimately resulting in improved service quality (Waqanimaravu & Arasanmi, 2020). Thus, implementing environmentally friendly practices by prioritizing cleanliness, comfort, staff competence, service quality and completeness of facilities will increase customer satisfaction.

According to the findings of Sanchis et al. (2022), implementing continuous training has been identified as a practical approach to enhance the resilience of the tourist sector in response to the challenges posed by the COVID-19 pandemic. Furthermore, training has a positive effect on participants' mindsets, skills, and knowledge levels, resulting in increased competence in specific domains, service quality, and customer satisfaction (Faremi & Heirs, 2022; Shanujas & Ramanan, 2023). Based on the elucidation provided by the five investigations, the current study presumes that the implementation of CHSE training has yielded enhanced competence among tourism industry operators in CHSE, leading to increased service quality and elevated satisfaction levels among tourists. Hence, this study employs the growth in visitor numbers as an endogenous variable, represented by tourist satisfaction as a proxy. Meanwhile, competence and service quality are conceptualized as mediating variables.

METHODS

This study's primary observation of scrutiny encompasses 851 East Java, Indonesia, tourism businesses awarded CHSE certificates (https://chse.kemenparekraf.go.id/en, accessed July 23, 2023). Moreover, the present study employed a primary data collection method by distributing questionnaires to respondents, mainly managers and employees within the tourism industry. The researchers employed the purposeful approach to select the sample of respondents for this study. Using this approach, researchers can choose respondents according to specific criteria (Sekaran & Bougie, 2016). This study defined the eligibility requirements for respondents, stipulating that individuals must possess at least five years of professional job experience. This criterion is predicated on the premise that respondents possess a certain level of discernment and a broader comprehension of managerial procedures within the tourism industry. The extant body of literature has demonstrated that purposeful approaches offer numerous advantages. These features encompass the researchers' capacity to define selection criteria congruent with their study objective, compatibility with various data types, and assistance obtaining representative samples (Lavrakas et al., 2019; Junus et al., 2023). Following the respondents' criteria, this study obtained 60 managers and 294 employees willing to complete a questionnaire. Table 1 presents the results of the sample selection of respondents in more detail.

Tourist satisfaction (TS) can be conceptualized as the congruence between tourists' expectations and the tangible outcomes of tourism industry services. This study employs TS as an endogenous variable, assessed using a set of 10 question items collected from the outcomes of prior studies (Martín & Bustamante-Sánchez, 2020). Table 2 presents a comprehensive compilation of 10 question items specifically designed and validated to assess the construct of TS.

CHSE training (CT) in the tourism sector is an educational, simulation, trial, assistance, guiding, monitoring, and evaluation activity for tourism business operators on hygiene, health, safety, and environmental sustainability protocols (MTE, 2020). The variable CT is regarded as exogenous, and it is assessed using a series of 12 question items constructed through a combination process and modifications from previous studies. Table 3 shows a summary of CT measurement items.

Table 1 Respondent Sample

Classification	Occupation					Frequency	
	Tourist attraction	Restaurant	Hospitality	MICE	Others	N	%
Position							
Managers	12	24	17	4	3	60	16.949
Employees	53	119	91	18	13	294	83.051
Gender							
Male	29	80	53	7	5	174	49.153
Female	36	63	55	15	11	180	50.847
Age							
20 - 29	19	42	35	6	4	106	29.944
30 - 39	26	61	52	9	8	156	44.068
40 - 49	12	26	12	4	2	56	15.819
50 - 55	8	14	9	3	2	36	10.169
Education							
High School	44	105	76	13	10	248	70.056
Under-graduate	18	33	26	7	5	89	25.141
Post-graduate	3	5	6	2	1	17	4.802
Marital Status							
Single	17	39	29	4	3	92	25.989
Married	48	104	79	18	13	262	74.011
Experience							
5 – 9 years	22	47	39	7	8	123	34.746
10 – 19 years	31	64	54	13	6	168	47.458
20 – 29 years	9	23	11	2	1	46	12.994
30 – 39 years	3	9	4	-	1	17	4.802

Table 2 Tourist satisfaction instrument

Abbreviation	Measurement items
TS1	The business's provision of a green landscape aligns with the expectations of tourists.
TS2	The provision of CHSE facilities is offered free of charge to tourists.
TS3	Tourists exhibit a cheerful disposition towards adhering to sanitary norms.
TS4	The same is valid for health protocols.
TS5	Tourists experience a sense of comfort, security, and assurance through the services the business provides.
TS6	The cleanliness of the water facilities provided is satisfactory to tourists.
TS7	The air conditions in the business environment are satisfactory to tourists.
TS8	Tourists highly favor the area where this business operates due to its lush and verdant surroundings.
TS9	The business's vegetation design has been well-received by tourists.
TS10	Tourists' express contentment with the CHSE amenities, encompassing provisions such as hand sanitizers, medical masks, first aid kits, fire suppression equipment, written materials for emergency medical aid, and more tools.

Table 3 CHSE training instrument

Abbreviation	Measurement items
CT1	The prioritization of the CHSE training program is a critical component in formulating the business plan.
CT2	CHSE training has been essential for improving workforce competence.
CT3	The business periodically organizes training sessions for CHSE.
CT4	The CHSE training program significantly emphasizes improving workforce adaptability to CHSE protocols.
CT5	CHSE training provides many benefits in business.
CT6	The CHSE training program delivers contemporary information and valuable insights to the workforce.
CT7	Participants in CHSE training receive direct instruction from qualified instructors and easy-to-understand material.
CT8	The evaluation of CHSE training participants is fair.
CT9	CHSE training has a substantial effect on business growth.
CT10	The impact of CHSE training on customer loyalty is substantial.
CT11	The capability of the employees to resolve tourist concerns improves due to CHSE training.
CT12	CHSE training programs have the potential to mitigate workplace issues.

This study examines the dual function of service quality (SQ) in the tourism industry, specifically its impact on TS and its position as a mediator in the relationship between CT and TS. SQ is a purposeful undertaking that seeks to meet customer demands in alignment with their preferences. SQ is measured using a set of 11 question items derived from previous studies (Nilashi et al., 2022). Table 4 presents the measurement items for the SQ variable.

The competency of the tourism business operator (TO) is related to the operational proficiency of both managers and staff, including skill sets, knowledge, and work attitudes that are under customer (tourist) expectations (Ek Styvén et al., 2022). In this study, TO relates to the skills and knowledge of managers and employees in carrying out the CHSE protocol. TO is a mediating variable in this study's model. It was measured with nine items modified from studies by Siahtiri et al. (2020). These items are presented into four sections based on CHSE components: cleanliness (TOc), health (TOh), safety (TOs), and environmental sustainability (TOe). Table 5 displays a total of nine measurement items related to TO.

The present study incorporated a comprehensive array of question items to determine the score of each variable. Respondents were instructed to assess each item using the Likert scale, encompassing a spectrum from one (representing a predominantly negative assessment) to five (representing a significantly positive rating). The resulting scores serve as a foundation for examining the association between factors.

This study utilized path analysis by implementing partial least squares path modelling (PLS-PM). The current model employs path coefficient (β), probability value (p-value), and effect size value as metrics for assessing the relationship between variables (Rochmatullah et al., 2023[a]). In the context of statistical analysis, the goodness of fit test entails the utilization of several statistical metrics to assess the appropriateness of an empirical model. These metrics include the probability value (p-value) of the average path coefficient (APC), the p-value of the average R-square (ARS), the p-value of the average adjusted R-square (AARS), and the average value of the variance inflation factor coefficient (AVIF).

Table 4 Service quality instruments

Abbreviation	Measurement items
SQ1	The utilization of contemporary equipment facilitates the provision of CHSE services.
SQ2	The CHSE facilities are fully provided.
SQ3	The business environment consistently maintains a state of cleanliness and comfort.
SQ4	The restroom and lavatory amenities consistently maintain a state of cleanliness and hygiene.
SQ5	Dedication to the CHSE protocol is one of the indicators used to assess service performance.
SQ6	The business publishes completely CHSE information through electronic media and other media such as pamphlets and leaflets.
SQ7	Most rooms or spaces are intentionally designed to be free of smoking.
SQ8	The availability of amenities that are free for CHSE.
SQ9	There exists a communication medium that facilitates the process for tourists to lodge complaints about the implementation of the CHSE protocols.
SQ10	The CHSE service is characterized by its rapidity and effectiveness.
SQ11	Availability of easily accessible CHSE-related information

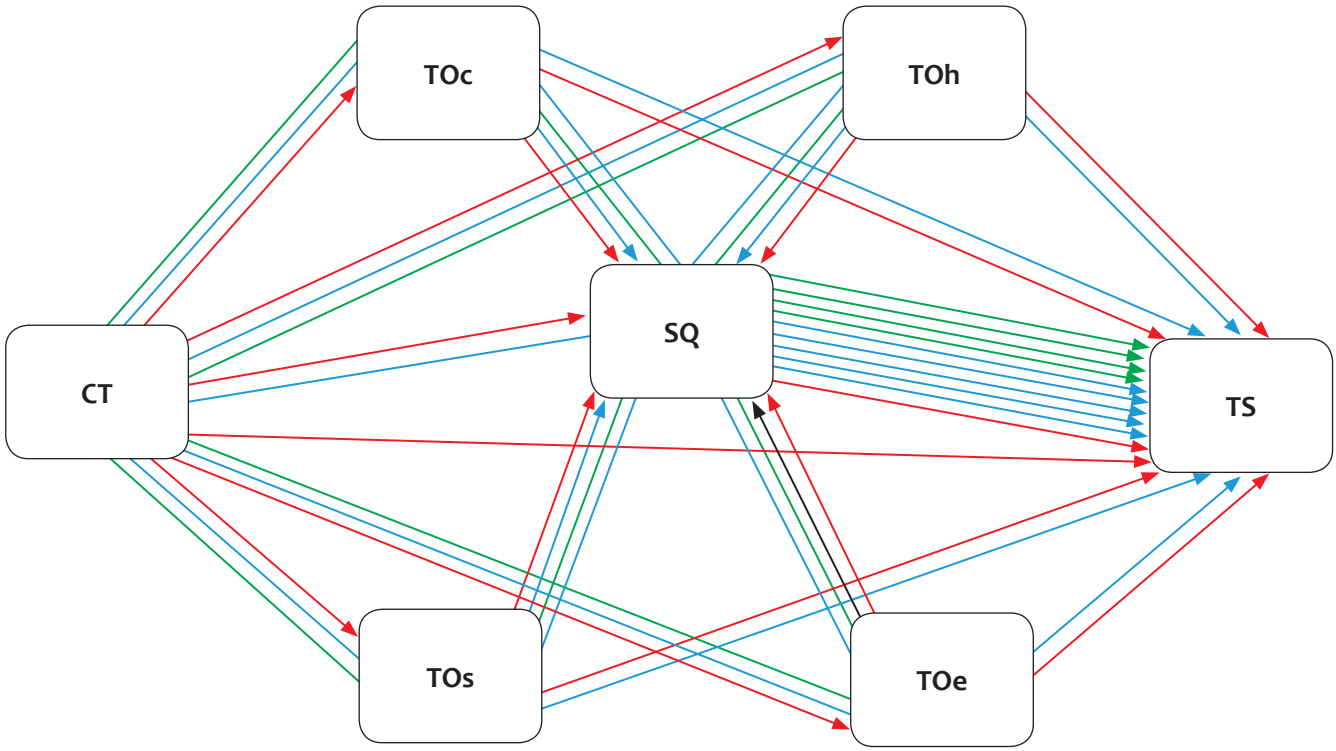
Table 5 Workforce competency instruments

Abbreviation	Measurement items
$TO_{c,h,s,e}$ 1	The workforce possesses the capacity to identify potential problems related to C/H/S/E
$TO_{c,h,s,e}$ 2	The workforce can enforce the C/H/S/E protocol among tourists through discreet and non-coercive means.
$TO_{c,h,s,e}$ 3	The workforce demonstrates behavior consistent with the C/H/S/E protocol when at work.
$TO_{c,h,s,e}$ 4	The workforce is capable of creatively addressing C/H/S/E issues.
$TO_{c,h,s,e}$ 5	The workforce can provide C/H/S/E services according to tourists' expectations.
$TO_{c,h,s,e}$ 6	The workforce can handle tourist complaints regarding C/H/S/E quickly and efficiently.
$TO_{c,h,s,e}$ 7	The workforce demonstrates cohesion when enacting the C/H/S/E protocol.
$TO_{c,h,s,e}$ 8	The workforce demonstrates solid dedication and strict adherence to the C/H/S/E procedure.
$TO_{c,h,s,e}$ 9	The workforce diligently adheres to ethical and regulatory procedures in implementing C/H/S/E measures.

Note(s): This instrument is categorized into four components according to the elements of cleanliness (c), health (h), safety (s), and environmental sustainability (e).

The analysis approach of this study is segmented into three distinct sections. The initial section entails an examination of the direct relationships between variables. The second section examines the interaction between variables with a single mediator (two segments). This second section emphasizes three distinct examinations. The initial assessment evaluates the relationship between CT and TS, which is mediated by TO, across four distinct areas: cleanliness (TOc), health (TOh), safety (TOs), and environmental sustainability (TOe). The second examination focuses on the TO-mediated relationship between CT and SQ within these four domains. The final examination evaluates the relationship between TO in the four areas and TS while including SQ as a mediator.

Subsequently, the third section entails a comprehensive examination wherein two mediators (comprising three segments) assess the interplay between variables. This third section comprehensively examines the relationship between CT and TS, mediated by TO, across four domains and SQ. The diagram in Figure 1 visually represents the interconnectedness of the variables inside the model.



Note(s):
Direct path
Indirect path (two segments)
Indirect path (three segments)

Figure 1 Model estimation

RESULTS AND DISCUSSION

Table 6 presents a comprehensive overview of the results obtained from the validity tests conducted in this study. The construct validity test results demonstrated that the obtained value exceeded the threshold of 6, suggesting that, generally, the questionnaire satisfied the requirements of novelty and relevance in assessing the variables under investigation in this study. In the interim, the outcomes of the content validity test confirmed that the obtained values for each item in the questionnaire surpassed the predetermined threshold, except for item SQ8. Consequently, the researcher removed the item from the questionnaire. Finally, this study utilizes 69 question items to assess the research variables.

Table 6 The Validity Analysis

TS			CT			SQ			TOc			TOh			TOs			TOe		
Items	Construct	Content	Items	Construct	Content	Items	Construct	Conte nt	Items	Construct	Content	Items	Construct	Content	Items	Construct	Content	Items	Construct	Content
TS	7.400		CT	8.083		SQ	7.250		TOc	7.633		TOh	7.567		TOs	7.467		TOe	8.050	
TS1		7.450	CT1		7.967	SQ1		7.950	TOc1		7.383	TOh1		7.300	TOs1		7.783	TOe1		8.167
TS2		7.483	CT2		8.033	SQ2		7.900	TOc2		7.567	TOh2		7.383	TOs2		7.867	TOe2		8.067
TS3		8.033	CT3		8.083	SQ3		7.867	TOc3		7.483	TOh3		7.317	TOs3		6.483	TOe3		7.967
TS4		7.883	CT4		7.933	SQ4		8.167	TOc4		7.267	TOh4		7.450	TOs4		7.867	TOe4		8.233
TS5		7.950	CT5		8.100	SQ5		7.917	TOc5		7.700	TOh5		7.567	TOs5		7.017	TOe5		7.850
TS6		8.033	CT6		8.017	SQ6		7.083	TOc6		7.383	TOh6		7.450	TOs6		7.717	TOe6		7.850
TS7		8.100	CT7		8.017	SQ7		6.900	TOc7		7.617	TOh7		7.383	TOs7		7.033	TOe7		7.950
TS8		7.983	CT8		8.000	SQ8		5.517	TOc8		7.300	TOh8		7.867	TOs8		7.883	TOe8		7.700
TS9		7.900	CT9		7.983	SQ9		7.400	TOc9		8.133	Oh9		8.433	TOs9		8.333	TOe9		8.517
TS10		7.917	CT10		8.133	SQ10		7.100												
			CT11		8.117	SQ11		6.833												
			CT12		8.067															

Moreover, the researchers performed a reliability test to determine the degree of consistency in the responses provided by respondents. Reliability tests were undertaken by researchers using an inter-coder approach. A previous study has elucidated that inter-coder reliability tests possess a higher level of efficacy due to their foundation on classical theory assumptions, specifically including comparisons among diverse raters. The stationarity of the responses provided by respondents in the first and second groups was assessed by researchers using an independent mean difference test (t-test) (Rochmatullah et al., 2023[b]). The alpha (α) level was established by researchers at a significance level of 0.05. The conclusion of the t-test result refers to the probability value (p-value) obtained. If the p-value is above the significance level of 0.05, then it can be stated that the answer response between the first group and the group is stationary, and vice versa. The results of the intercoder reliability test are presented in Table 7.

The t-test results displayed in Table 7 provide a concise overview of the comparative test outcomes between coder 1, consisting of 60 tourism business employees outside the respondents used in this study, and coder 2, consisting of 354 respondents, as used in this study. The test results indicate that all variables' significance value (Sig. 2_tiled) is above 0.05. The results indicate a propensity for test results to exhibit consistency or stationarity between the expert and respondent groups.

Table 7 The Results of The Inter-Coder Reliability Tests

Variable	Mean Difference	Std. Error Difference	Interval of the Difference		Sig. (2_tiled)	Conclusion
			Lower	Upper		
TS	0.375	0.303	-0.221	0.971	0.217	Consistent
CT	0.288	0.263	-0.230	0.806	0.275	Consistent
SQ	0.286	0.243	-0.191	0.763	0.239	Consistent
TOc	0.370	0.301	-0.221	0.961	0.219	Consistent
TOh	0.274	0.234	-0.186	0.734	0.242	Consistent
TOs	0.429	0.290	-0.141	0.998	0.140	Consistent
TOe	0.357	0.309	-0.250	0.964	0.248	Consistent

Note (s): The statistical significance (Sig. 2-tailed) value is greater than 0.05, indicating that the results from coder 1 and coder 2 tend to be consistent (stationary); Coder 1 had a sample size of 60 employees outside of respondents in this study, whereas Coder 2 had 354 primary respondents in this study.

Table 8 Model fit and quality indices

Indicators	Quality Indices		Conclusion
	Coefficient	P-value/Ideal value	
APC	0.281	<0.001*	Significant
ARS	0.412	<0.001*	Significant
AARS	0.409	<0.001*	Significant
AVIF	1.985	< 3.300[a]	No multicollinearity

Note(s): The asterisk (*) symbol denotes that the probability value (p-value) is lower than the predetermined significance level of 0.01; Conversely, the lowercase letter (a) signifies that the resulting value falls below the ideal threshold of 3.3; APC is an acronym denoting Average Path Coefficient; ARS represents Average R-Squared; AARS refers to Average Adjusted R-Squared; AVIF stands for Average Variance Inflation Factor.

Table 8 presents the p-values for APC, ARS, and AARS, all of which are statistically significant at the level of significance of 0.01. In the present context, the AVIF value falls below the ideal threshold of 3.3. These results suggest that the analysis model has satisfied the conditions for goodness of fit. Additionally, Figure 2 depicts the fit model generated in the present study. The provided figure indicates that all path coefficients demonstrate positive outcomes, suggesting optimistic predictions of relationships between variables, both directly and indirectly. A more thorough explanation is provided in the section dedicated to path analysis.

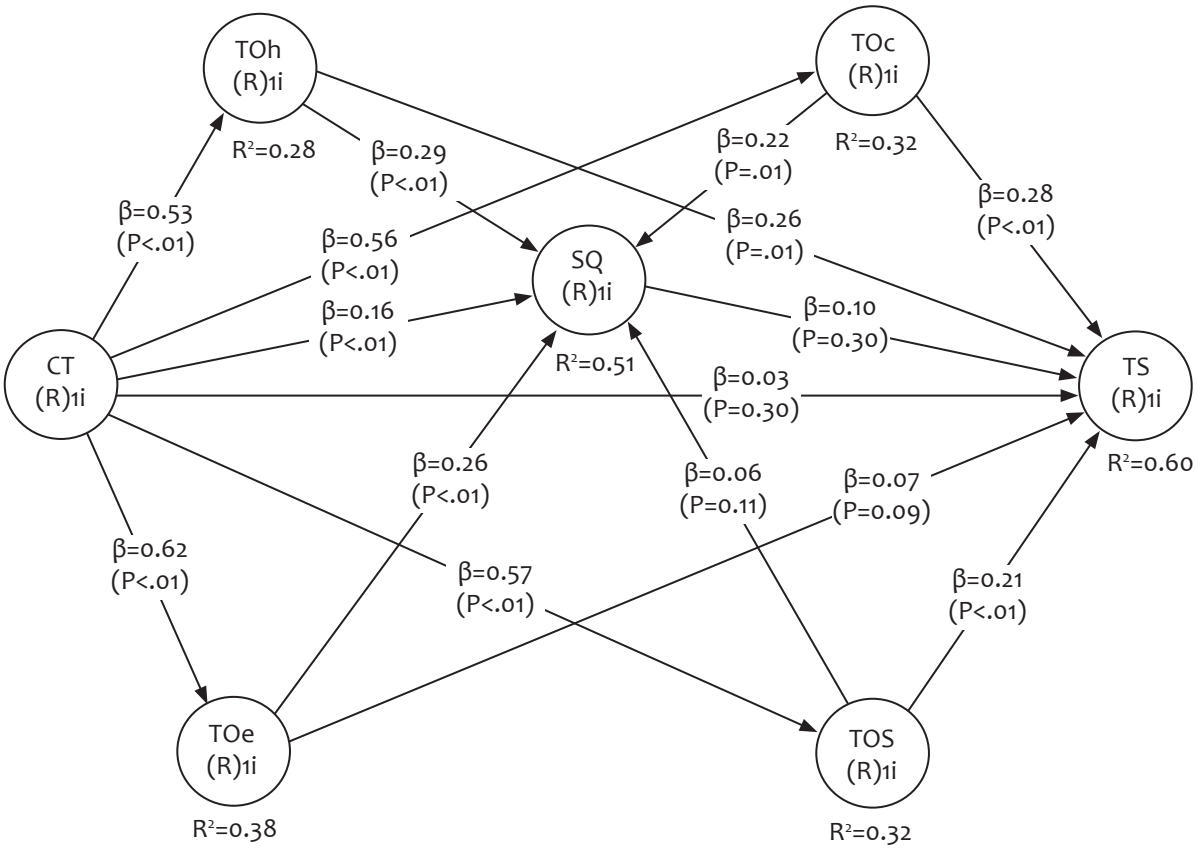


Figure 2 Fit Model

Table 9 presents the direct relationship pathway of all variables, denoted by the path coefficient (β), probability value (p-value), and effect size. The relationship between CT and SQ demonstrates a positive β coefficient and a p-value below the predetermined significance level of 0.01. However, the effect size is just 0.086, indicating a weak relationship. The results indicate a notable resemblance in the relationship between CT and TS, as evidenced by a p-value exceeding the predetermined significance level of 0.1 and a small effect size of 0.015. Also, the relationship path between SQ and TS yields mild effect size values of 0.058. These three findings suggest that the relationship between CHSE training, service quality, and tourist satisfaction cannot be explained directly.

Table 9 presents further noteworthy findings, including positive β values, p-values below the significance threshold of 0.01, and effect sizes in the range of 0.284 - 0.381, indicating a substantial effect for the associations between CT, TOc, TOh, TOs, and TOe. Similarly, the association pathway encompassing TOc, TOh, TOe, and SQ has positive β values, p-values below 0.01, and effect sizes between 0.127–0.174, indicating a moderate impact.

Other information revealed a positive relationship between TOc, TOh, TOs, and TS, as evidenced by significant β coefficients with p-values less than 0.01 and a moderate effect size in the range of 0.132 - 0.185. The findings mentioned above suggest that the implementation of CHSE training has been empirically demonstrated to enhance the capabilities of tourism industry operators in areas such as cleanliness, health, safety, and environmental sustainability. Nevertheless, it should be noted that not all competencies associated with CHSE favourably impact service quality and the satisfaction of tourists. This analysis shows that TOs and TOe are not connected to SQ and TS. The two- and three-segment path analysis section describes the relationships between variables in more detail.

Table 9 One-segment path analysis

Variant 1		Variant 2		Variant 3	
Direct Path	**Indices**	**Direct path**	**Indices**	**Direct path**	**Indices**
CT>SQ	0.155	TOc>SQ	0.219	TOc>TS	0.283
	[0.001]*		[<0.001]*		[<0.001]*
	(0.086)^{W}		(0.127)^{M}		(0.185)^{M}
CT>TS	0.028	TOh>SQ	0.292	TOh>TS	0.259
	[0.299]		[<0.001]*		[<0.001]*
	(0.015)^{W}		(0.174)^{M}		(0.166)^{M}
CT>TOc	0.562	TOs>SQ	0.064	TOs>TS	0.212
	[<0.001]*		[0.112]		[<0.001]*
	(0.316)^{S}		(0.030)^{W}		(0.132)^{M}
CT>TOh	0.533	TOe>SQ	0.257	TOe>TS	0.071
	[<0.001]*		[<0.001]*		[0.088]***
	(0.284)^{M}		(0.155)^{M}		(0.041)^{W}
CT>TOs	0.569	SQ>TS	0.100		
	[<0.001]*		[0.028]**		
	(0.323)^{S}		(0.058)^{W}		
CT>TOe	0.618				
	[<0.001]*				
	(0.381)^{S}				

Note(s): The presented table displays the path coefficient (β), with the value enclosed in square brackets representing the probability value (p-value), and the value enclosed in parentheses indicating the effect size. The symbols (W), (M), and (S) are used to represent weak, moderate, and strong effect sizes, respectively. Similarly, the symbols (*), (**), and (***) are used to signify p-values less than 0.01, 0.05, and 0.10, respectively.

Table 10 concisely overviews the indirect relationships across variables within two distinct segments. The relationship between CT and SQ>TS demonstrated statistically significant positive β values, with p-values below the predetermined significance level of 0.01. The effect sizes were also found to be 0.118, falling within the moderate category. The results of this examination suggest that the association between CT and TS can be elucidated through the mediating role of SQ. Furthermore, the CT relationship path to TOc>TS, TOh>TS, TOs>TS, and TOe>TS exhibits a comparable scenario, resulting in positive β values, statistically significant p-values at

the 0.01 level, and effect sizes on the spectrum of 0.127 - 0.156, indicating a moderate effect. These results indicate that the relationship between CHSE training and tourist satisfaction can be determined indirectly (two segments) by considering the quality of services and competencies of tourism business operators in cleanliness, health, work safety, and environmental sustainability.

The statistical information in Table 10 shows that the causal path between CT and SQ goes through the variables TOc>SQ, TOh>SQ, TOs>SQ, and TOe>SQ. The four pathways' results suggest an unacceptable relationship between CT and TOs>SQ. This relationship is characterized by an insignificant effect size of 0.066. On the other hand, the interaction between CT and the other three metrics consistently yielded positive β values, with p-values reaching the significance threshold of 0.01. Also, the effect sizes are in the range of 0.122 - 0.145, placing them inside the moderate relationship category. This analysis indicates that implementing CHSE training contributes to enhancing competencies among tourism industry operators in hygiene, health, and environmental sustainability, ultimately resulting in improved service quality.

Table 10 Two-segment path analysis

Variant 1		Variant 2		Variant 3	
Mediation path	**Indices**	**Mediation path**	**Indices**	**Mediation path**	**Indices**
CT>SQ>TS	0.217	CT>TOc>SQ	0.219	TOc>SQ>TS	0.172
	[<0.001]*		[0.001]*		[<0.001]*
	(0.118)^{M}		(0.122)^{M}		(0.113)^{M}
CT>TOc>TS	0.286	CT>TOh>SQ	0.223	TOh>SQ>TS	0.175
	[<0.001]*		[<0.001]*		[<0.001]*
	(0.156)M		(0.124)^{M}		(0.112)^{M}
CT>TOh>TS	0.104	CT>TOs>SQ	0.119	TOs>SQ>TS	0.168
	[<0.001]*		[<0.001]*		[<0.001]*
	(0.127)^{M}		(0.066)^{W}		(0.105)^{M}
CT>TOs>TS	0.263	CT>TOe>SQ	0.261	TOe>SQ>TS	0.215
	[<0.001]*		[<0.001]*		[<0.001]*
	(0.143)^{M}		(0.145)^{M}		(0.124)^{M}
CT>TOe>TS	0.240				
	[<0.001]*				
	(0.131)^{M}				

Note(s): The presented table displays the path coefficient (β), with the value enclosed in square brackets representing the probability value (p-value), and the value enclosed in parentheses indicating the effect size. The symbols (W), (M), and (S) are used to represent weak, moderate, and strong effect sizes, respectively. Similarly, the symbols (*), (**), and (***) are used to signify p-values less than 0.01, 0.05, and 0.10, respectively.

Table 10 further illustrates the path of the two-segment relationship between competency variables in the four fields of CHSE (TOc, TOh, TOs, and TOe) and TS mediated by SQ (SQ>TS). The results derived from the analysis of the four relationship paths indicate that all metrics yield consistent outcomes, as evidenced by the presence of positive β values with p-values below the predetermined significance level of 0.01. The effect size ranges from 0.105 - 0.124, indicating a moderate effect level. These findings suggest that the implementation

of CHSE training programs has resulted in a notable enhancement of the competence of tourism industry operators across all CHSE domains, thereby improving service quality and tourist satisfaction. Based on the findings of the overall analysis, it is plausible to posit that there is a complementary relationship between CHSE training, competence, service quality, and tourist satisfaction.

The test results concerning the two segment paths have yielded favourable outcomes. However, it is essential to note that these results have yet to understand the anticipated relationship among all variables comprehensively. The subsequent section offers an elucidation of the findings derived from the three-segment path analysis undertaken to authenticate the initial predictions of this study.

Table 11 presents a comprehensive and detailed breakdown of the results of implementing the path analysis technique in three segments. The examination results show a positive β coefficient for all relationship paths. The statistical significance of the p-value was found to be 0.01, indicating a significant result. Unfortunately, the effect size was below 0.078, which is in the weak range. These findings indicate that including TO in four areas of CHSE and SQ reduces the relationship between CT and TS. These findings do not provide sufficient evidence to support predictions regarding the relationship between CHSE training, CHSE competency, service quality, and customer satisfaction. These findings indicate a tendency that supports the notion of a weak relationship between CT and TS, as observed in Table 9.

Table 11 Three-segment path analysis

Mediation path	Indices			
	Variant 1	Variant 2	Variant 3	Variant 4
CT>TOc>SQ>TS	0.127 [<0.001]* (0.069)^{W}			
CT>TOh>SQ>TS		1.124 [<0.001]* (0.067)^{W}		
CT>TOs>SQ>TS			1.101 [<0.001]* (0.055)^{W}	
CT>TOe>SQ>TS				0.145 [<0.001]* (0.078)^{W}

Note(s): The presented table displays the path coefficient (β), with the value enclosed in square brackets representing the probability value (p-value), and the value enclosed in parentheses indicating the effect size. The symbols (W), (M), and (S) are used to represent weak, moderate, and strong effect sizes, respectively. Similarly, the sign (*) indicates p-value less than 0.01.

Afterwards, the researchers performed additional analyses to acquire reliable and resilient findings. This study used an indirect path analysis approach of three segments, which are classified based on the four types of businesses within the tourism industry observed in this study. The findings of this additional investigation are displayed in Table 12.

Table 12 depicts the indirect relationship using a two-step mediation model (three-segment) among variables categorized based on industry type. The findings from the examination of test results in the tourist attraction industry demonstrate that all relationships exhibit favourable outcomes, as evidenced by a positive β coefficient, a p-value below the predetermined significance level of 0.01, and an effect size falling within the moderate range of 0.138 – 0.221. The results of this examination suggest that the provision of CHSE training in the tourist attraction sector is associated with a noteworthy and favourable relationship with worker proficiency in maintaining cleanliness, ensuring health and safety, and promoting environmental sustainability. This association facilitates enhanced service quality, resulting in elevated tourist satisfaction levels. Therefore, the effectiveness of CHSE certification has been demonstrated in tourist attractions.

Table 12 presents divergent findings for the remaining three sectors as well. Within the realm of the restaurant business, the effect size value exhibits a relatively modest magnitude, falling within the range of 0.078 to 0.095. Similarly, effect size values ranging from 0.061 to 0.088 are seen within the hotel business. In the MICE and other industries, the relationship paths of CT>TOc>SQ>TS and CT>TOs>SQ>TS yield a p-value beyond the significance threshold of 0.1. A fragile relationship is also observed, with an effect size ranging from around 0.027 to 0.033. In the present analysis, it was observed that the relationship paths CT>TOh>SQ>TS and CT>TOe>SQ>TS yielded a p-value below the predetermined significance level of 0.1. However, it is essential to note that the effect size associated with these relationships ranged from 0.040 to 0.048, indicating a relatively weak effect. These results suggest a relationship between CHSE training and the competency of workers; however, this relationship does not translate into enhancements in service quality and tourist satisfaction. Therefore, the three businesses above have yet to prove the efficacy of CHSE certification.

Table 12 Three-segment path analysis further analysis

Mediation Path	Indices			
	Tourist attraction	**Restaurant**	**Hospitality**	**MICE & Others**
CT>TOc>SQ>TS	0.194	0.145	0.154	0.079
	[0.003]*	[0.001]*	[0.002]*	[0.195]
	(0.151)^{M}	(0.095)^{W}	(0.061)^{W}	(0.027)^{W}
CT>TOh>SQ>TS	0.204	0.125	0.167	0.117
	[0.002]*	[0.004]*	[0.001]*	[0.099]***
	(0.160)^{M}	(0.082)^{W}	(0.065)^{W}	(0.040)^{W}
CT>TOs>SQ>TS	0.176	0.120	0.208	0.097
	[0.006]*	[0.006]*	[<0.001]*	[0.143]
	(0.138)^{M}	(0.078)^{W}	(0.082)^{W}	(0.033)^{W}
CT>TOe>SQ>TS	0.283	0.136	0.224	0.139
	[<0.001]*	[0.002]*	[<0.001]*	[0.061]***
	(0.221)^{M}	(0.089)^{W}	(0.088)^{W}	(0.048)^{W}

Note(s): The presented table displays the path coefficient (β), with the value enclosed in square brackets representing the probability value (p-value), and the value enclosed in parentheses indicating the effect size. The symbols (W), (M), and (S) are used to represent weak, moderate, and strong effect sizes, respectively. Similarly, the symbols (*), (**), and (***) are used to signify p-values less than 0.01, 0.05, and 0.10, respectively.

In Indonesia, CHSE certificates have become essential in the tourism business in the post-COVID-19 pandemic era. The issuance of certificates fosters confidence among tourists concerning the implementation of strict managerial practices within the tourism sector. This pattern has been corroborated in numerous studies examining certification programs for tourism businesses in various domains (see, e.g., Bandara et al., 2018; Martínez et al., 2019). Meanwhile, most tourists believe that tourism businesses that acquire CHSE certificates have advantages in terms of hygiene, health, safety, and eco-friendliness (MTE, 2021). Disinfection methods using sophisticated cleaning technologies and healthy lifestyles among employees and tourists exhibit hygiene and health excellence (Shin & Kang, 2020; Akhter Shareef et al., 2023). The compliance of tourism business owners and personnel with the most recent safety regulations demonstrates excellence in security (Bulchand-Gidumal, 2022). Furthermore, tourism businesses' efforts to incorporate the green industry paradigm into their operations are intimately tied to environmental sustainability excellence (Cazcarro et al., 2022). Thus, the CHSE certificate is a testament to the high management standard within the tourism industry, making it an appealing choice for travellers seeking reliable and reputable tourism services.

The emergence of the green tourism sector has generated significant optimism among the global populace. Consequently, the initiative to foster innovation to establish a sustainable tourism industry has emerged as essential in managing tourism enterprises throughout diverse nations. A study in Sri Lanka illustrates that the country is implementing green human resource management (GHRM) initiatives within the tourist sector to cultivate employee empathy towards environmental sustainability (Siyambalapitiya et al., 2018). The tourism sector in China has initiated efforts to enhance tourism's green innovation efficiency (GIE) by adopting environmentally conscious technologies that integrate modern technology and environmental science. The primary objective of these initiatives is to mitigate the adverse effects of human activities (Sun et al., 2022). Meanwhile, Filimonau et al. (2022) revealed that a "green hotel" discourse has evolved in the Polish state, encouraging local hotel administrations to conserve the environment.

Furthermore, the Aragonese authorities have implemented various initiatives to promote sustainable tourism. These efforts include safeguarding biological natural resources, implementing waste management strategies specific to the tourism sector, implementing educational programs promoting sustainable tourism practices, and establishing environmental regulations (Yuedi et al., 2023). Several studies mentioned above demonstrate that developing a sustainable tourism sector can be accomplished through various strategies. These strategies encompass enhancing the skills and knowledge of individuals involved in the industry through educational programs and training initiatives, embracing environmentally friendly technologies, conserving natural resources, implementing effective waste management practices, and enforcing regulatory policies. Interestingly, the Indonesian government's endeavours to promote the sustainability of the tourist sector through CHSE certification extend beyond the mere adoption of sustainability measures often witnessed in numerous nations. According to the provisions outlined in MTE Regulation 13/2020, the utilization of new approaches in the execution of the CHSE certification for the tourism industry necessitates adherence to many dimensions, including cleanliness, health, safety, and a green environment. Thus, the CHSE certification represents a complete and unique strategy for ensuring the long-term sustainability of tourism businesses.

The present study has identified a beneficial relationship between CHSE certification and tourist satisfaction within the tourist attraction industry. This phenomenon can be attributed to the satisfaction experienced by tourists when visiting tourist destinations that possess qualities such as cleanliness, healthiness, safety, and aesthetic appeal. The findings derived from researchers' observations conducted at diverse tourist destinations in Indonesia, encompassing beaches, villages, mountains, forests, and caves, indicate that contented tourists

tend to capture self-portraits, commonly known as selfies, against the backdrop of scenic landscapes and subsequently share them on social media platforms. Sharing personal photographs featuring individuals amidst the captivating beauty of natural landscapes has a tangible effect on augmenting the number of tourists visiting a particular destination. The findings of this observation are consistent with previous studies that indicate selfies captured during tourist excursions can be interpreted as a manifestation of tourist expression, wherein individuals seek to showcase appealing aspects that are juxtaposed against the backdrop of their journey (Deng & Liu, 2021). In their study, Nong et al. (2023) delineated a minimum of five distinct motivations that prompt individuals to share selfies on social networking platforms. The motivations encompassed in this context consist of archiving, exerting good influence, seeking acknowledgement, engaging in social contact, and engaging in self-representation. Moreover, the study conducted by Lee et al. (2023) demonstrated that using social media platforms can enhance the perceived worth of a tourist destination, as it serves as a lucrative approach to marketing. The results of this study, when combined with prior studies, suggest that the certification of CHSE is a form of success for the Indonesian Government in implementing management strategy concepts to enhance the performance of tourist attractions business following the COVID-19 crisis.

More specifically, the comprehensive findings of the analysis conducted in this study indicate that the most substantial effect size is observed in the relationship between variables associated with competency in the domain of environmental sustainability, as illustrated in Tables 9, 10, 11, and 12. These results offer valuable insights into the impact of CHSE certification on promoting environmentally friendly procedures within the tourism industry in Indonesia. Recent studies further support these findings by demonstrating that assessing tourism business management quality is fundamentally contingent upon the perception of service satisfaction (Bhattacharya et al., 2023). Similarly, studies conducted within the hospitality sector have demonstrated that employee training is the most effective means of enhancing their abilities and competencies, ultimately resulting in improved service quality (Waqanimaravu & Arasanmi, 2020). Numerous international studies have yielded empirical evidence indicating that adopting environmentally sustainable procedures within the tourist sector exerts a noteworthy influence on the resilience of businesses operating in this industry. Using green development strategies in the tourism sector has proven effective in enhancing the quality of the tourism business in China. The strategies involve technological innovation, the expansion of virtual service accessibility, support for small and medium enterprises (SMEs) within the tourism industry, and the implementation of specialized packages to encourage elderly individuals to participate in tourism promotion efforts (Sun et al., 2022; Zhang et al., 2022; Xu et al., 2023).

Similarly, empirical evidence has been seen by Mediterranean coastal countries, indicating that the adoption of greening measures within the marine tourist sector makes a substantial contribution to sustainable economic, social, and environmental development (Mejjad et al., 2022). According to a study conducted by Pongsakornrungsilp & Pongsakornrungsilp (2023), the tourism industry in the Krabi region of Thailand has successfully implemented a circular economy model with the support of various stakeholders. These stakeholders have actively worked to cultivate a green culture and encourage environmentally friendly practices. Moreno-Izquierdo et al. (2023) revealed that the proximity of the tourism industry to green spaces has contributed to its ability to sustain commercial operations in the aftermath of the COVID-19 pandemic. Based on the synthesis of these studies, this study believes that the environmentally friendly tourism sector has experienced substantial growth in popularity among international tourists. Hence, implementing CHSE certification in Indonesia is a strategic measure to promote green development within the tourism sector to enhance tourist appeal, particularly in the tourist attraction industry. The study's subject can confirm the success of this strategy, East

Java Province, Indonesia, which has 195 million tourist trips projected in 2022, with most of these trips going to the tourist attraction business (BPS, 2022).

CONCLUSION

CHSE certification program exerts a notable influence on the level of satisfaction among tourists, particularly within the tourist attraction industry. Tourist satisfaction is closely associated with their preference for a tourist destination that offers a clean, hygienic, safe, and environmentally friendly environment. The present study observed that travelers frequently manifest their contentment with tourist locations by capturing self-portraits, commonly referred to as selfies, which are subsequently shared on various social media platforms. The efficacy of visitors' inclination to share self-portraits throughout their travels has been substantiated as a potent marketing instrument for the tourism sector (Lee et al., 2023; Armutcu et al., 2023). Thus, sharing self-portraits taken by tourists at popular tourist sites can be seen as an indicator of the effectiveness of CHSE certification. More specifically, this study discovered that CHSE certification emphasizes enhancing the quality of green management in the tourism business's environment. This emphasis is in response to international tourists' desire for green destinations. In other words, the tourism industry's emphasis on green development aims to satisfy travelers visiting tourist destinations. On the other hand, analysis of the restaurant, hospitality, and MICE industries yields different findings. The analytical results reveal that the strength of the relationship between variables significantly weakened when combined in a single relationship path. This study, overall, dismisses this relationship. These findings show that CHSE certification has been ineffective in these three areas. Thus, this study concludes that the implementation of CHSE certification is a response to the demands of tourists on green development in the tourist attractions industry and represents a potent strategy to augment tourist footfall. This study develops upon prior studies that have examined quality certification within the tourism industry (see e.g., Bandara et al., 2018; Martínez et al., 2019; Aïdi & Fabry, 2022; Chi et al., 2022; Xue et al., 2023). The findings of this study demonstrate that the recognition of the Indonesian authorities regarding the cleanliness, health, safety, and environmental sustainability standards, as evidenced by the CHSE certification program, has exerted a notable influence on the increase in tourist footfall within the tourist attraction industry. In a more specific context, it has been observed that the CHSE certification places a heightened focus on promoting green development within the tourist attraction industry. This emphasis significantly influences the level of contentment experienced by tourists, as seen by their propensity to share self-portraits on social media platforms. It is worth noting that these images inadvertently assume the role of a potent marketing instrument. Factually, the subject of this study demonstrates that the implementation of CHSE certification is concomitant with a substantial surge in tourist footfall within the tourism sector after the COVID-19 outbreak. The findings presented herein have made a scholarly contribution to the advancement of management strategic concepts that concern the tourism industry in the aftermath of the COVID-19 pandemic. The findings of this study offer practical insights for countries that have encountered challenges in developing tourist destinations, particularly in implementing green certification measures as part of their efforts to revive the tourism sector in the aftermath of the COVID-19 pandemic.

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