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# Destination Competitiveness of a Tourist Region: A Case of Kerala, India

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## Abstract

The concept of tourism destination competitiveness (TDC) is very complex, and so is developing a model for different destination contexts. The study aims to identify variables to measure the overall TDC of destination brand Kerala (India). A quantitative research design is followed based on a self-administered questionnaire survey strategy. A comprehensive study of various indices and published literature on TDC is conducted to arrive at a detailed list of variables for measuring competitiveness. Through content analysis and screening based on expert opinion surveys and interviews, variables are tailored to the natural and cultural destination region, Kerala. The perceptions of expert supply stakeholder groups regarding the relevance of variables are recorded. An exploratory factor analysis (EFA) is conducted to find underlying factors. The result is used to build a multiple linear regression model. Though the destination is celebrated for its 'Inherited and created resources', the study identifies that 'Destination safety and quality' has the highest impact on the TDC of Kerala. 'Absence of general strike', 'Methods of work/technique', and 'Navigation within the destination' are new significant variables that distinctly pertain to Kerala. The research is expected to help the destination management team evaluate the strengths and weaknesses of the destination, assess TDC, and develop policies and guidelines to improve competitiveness.

**Keywords:** competitiveness, destination brand, sub-national, supply stakeholder, TDC, tourism destination

## Introduction

Tourism is widely acknowledged as a substantial contributor to the worldwide economy and one of the most critical aspects of modern socio-economic progress (UNWTO, 2021b), which has become more evident with the sector's fall during the Covid pandemic. International tourist arrivals reached 1.4 billion in 2018 (UNWTO, 2019), against that forecasted for 2020 (UNWTO, 2018), accomplished two years ahead, indicative of the remarkable growth of international tourist arrivals in previous years. The tourism industry expected a promising future by 2030 since most tourists are likely to travel mainly for leisure, amusement, and holiday purposes (UNWTO, 2011). However, by the end of the first quarter of 2020, the Covid-19 pandemic, the biggest unprecedented crisis in tourism, halted international travel and curtailed domestic travel. Since

then, the tourism industry has been significantly impacted. According to the UNWTO (2021a), tourism experts do not expect a return to pre-Covid arrival levels until 2023. Indeed, nearly half of the surveyed experts expect a return to 2019 levels in 2024 or later; the main impediments being travel restrictions, slow virus containment, low traveller confidence, and a deteriorating economic environment (UNWTO, 2021b). Maintaining competitiveness becomes inevitable for strategic positioning and marketing of a tourism destination to defend future growth of the industry, especially in a post-pandemic environment.

In the growing and ever-challenging tourism market, a destination's competitiveness has become a significant subject. Buhalis (2000) defined "destination" as a country, region, city, or area. However, it now refers to a collection of tourism products that provide integrated experiences to the demand-side stakeholders (Aktürk & Akbaba, 2021). The level of productivity defined by a destination's collection of tourism products, policies, external conditions, and competitive advantage determines tourism competitiveness (Koo et al., 2016). Due to increased competition among tourism product suppliers, tourism destinations must maximize their competitive and comparative features to obtain a competitive edge in the global tourism industry (Hanafiah & Zulkifly, 2019), which would stimulate many studies that advance the notion of tourism destination competitiveness.

Cronjé & du Plessis (2020) states that the competitiveness of tourism destinations will continue to be a prominent study area in the tourism sector, enabling destinations to maintain their market position. The focus must be on other continents, as most TDC case studies are in Europe (Cronjé & du Plessis, 2020). The case region of the current research is chosen to be the destination brand, Kerala in India in Asia. Internationally branded as 'God's own country' by the Department of Tourism, Government of Kerala, the destination is endowed with natural and cultural attractions.

The concept of TDC has been applied at various levels – resorts (Hallmann et al., 2014), rural areas (Roman et al., 2020), cities (Wan et al., 2019), islands (Kumar et al., 2021; Mustafa et al., 2020), regions (Pérez León et al., 2021), and countries (Milutinovic et al., 2021). Since most of the prevailing TDC models are advanced for large regions and countries (Salinas Fernández et al., 2020), they do not apply to small, maturing destinations within countries (Azzopardi & Nash, 2016). At least in a few studies, the notion of regional competitiveness within a nation corresponds to that between nations, and the significant conclusions from national competitiveness apply equally to regional competitiveness within countries (Aiginger & Vogel, 2015). Since destination region Kerala stands unique from the rest of India in terms of comparative (destination resources) and competitive (infrastructure, planning and management) advantages, its competitiveness cannot be interpreted from that of the country. Hence factors contributing to the competitiveness of Kerala need to be identified and assessed for the destination to reach its full potential to readily compete on an international scale, particularly in this post-Covid scenario.

In the context of tourism destinations, competitiveness refers to a destination's ability to supply tourism-related products and services that visitors find superior to its competitors (Dwyer & Kim, 2003). Many researchers have worked on the competitiveness of either nature-based (Mustafa et al., 2021) or culture-based (Eddyono et al., 2021) or combined types of tourist destinations (Guizzardi et al., 2021). Also, most studies take a demand-side approach, with recent literature on the TDC of nature-based destinations being conducted in Brazil (Dos Anjos & Da Rosa, 2021). The limited comprehensive information visitors will have about a specific destination and its

competitors due to the meagre time visitors spend in that particular destination is a criticism of this approach. Quite a few studies have considered perspectives of both demand and supply sides. By including the views of travellers and tourism practitioners, Salvado and Joukes (2021) enhance the methodological approach to assess wine heritage and cultural destination competitiveness in the North of Portugal. While considering the perspectives of both demand and supply sides, most scales include only those variables that can be assessed by both stakeholders (Abreu-Novais et al., 2016). Supply-side stakeholders (service providers) are knowledgeable about their destination. They are considered true industry experts as their perspectives are more realistic due to their experience with the industry in their destination and their observations as visitors in other destinations (Bahar & Kozak, 2007). Limited literature is available on the competitiveness of nature and culture-based destinations from service providers' perspectives.

In this context, the paper aims to advance a set of variables to evaluate the tourism competitiveness of the destination brand, Kerala, focusing on nature and culture-based tourism products at a sub-national level from the service providers' perspective. Specifically, the purpose is to establish how important each factor is in explaining Kerala's tourism competitiveness and which components should be prioritized in future tourism advancement. To achieve the goal, empirically, the study identifies variables, develops a multi-item scale to measure the overall TDC, and prioritizes the factors. Essentially it is done using Exploratory Factor Analysis (EFA) and regression analysis.

Thus, the present research advances previous works on destination competitiveness by developing and empirically testing a strategic model for measuring the TDC of nature and culture-based destination brands from a supply-side expert stakeholder perspective. The study helps evaluate the destination's strengths and weaknesses, assess TDC compared to similar destinations and develop policies and guidelines to improve competitiveness. The findings benefit stakeholders and destination management teams working to improve destinations' competitiveness.

For this purpose, the study is designed in seven sections. The introduction is followed by the second section on a literature review conducted on the concept of TDC, different models, their criticisms and limitations, and the context of the study. The third section outlines the overall methodology and describes the instruments, measures, tools and techniques used in the study. The fourth section deals with data analysis results, followed by a discussion in the fifth. The last three sections conclude the study by providing an overview of contributions, theoretical and practical suggestions, limitations, and future studies.

## **Literature Review**

### ***Concept of Competitiveness and Tourism Destination Competitiveness***

The conception of competitiveness is from economics and is well-rooted in business literature. A few perceive it in a socio-cultural and politico-historic setting. The significance and measurement of competitiveness rely upon the choice of item and conditions for comparison; the multiplicity of factors and variables that control competitiveness; the unit of analysis; and the ultimate goals of its pursuit. The diversity of conceptualization adds to discrepancies and confusion surrounding the concept.

TDC is a controversial, complex and multifaceted notion similar to competitiveness in general (Kim et al., 2021; Zadeh Bazargani & Kiliç, 2021). Despite recent advancements in the TDC domain, there is no unified framework, universally recognized definitions, and agreement on how this conception should be measured (Aguiar-Barbosa et al., 2021). The term is linked to several variables, and many definitional statements and viewpoints have been proposed (Abreu Novais et al., 2018). Accord on a particular definition remains elusive (Botti & Peypoch, 2013). A comprehensive definition of TDC is given by Ritchie and Crouch (2003) as "the ability of a destination to increase tourism expenditure, to increasingly attract visitors, provide them with satisfying, memorable experiences and to do so in a profitable way, while enhancing the well-being of destination residents and preserving the natural capital". Thus, in tourism, the competitiveness concept is most commonly defined as 'ability' in the perspective of a destination's capacity to achieve specific objectives (Cimbaljević et al., 2019).

Economic (e.g., Li et al., 2013), attractiveness and satisfaction (e.g., Enright & Newton, 2004), and sustainability (e.g., Goffi et al., 2019) are the three fundamental dimensions underlying definitional statements of competitiveness. A destination is a tourism product that survives by the tourists visiting. The competitiveness of a destination is its capability to attract visitors (Abreu Novais et al., 2018). According to Dwyer and Kim (2003), destinations must strive to be alluring to visitors and offer a superior tourism experience compared to competing destinations. Though a destination cannot be competitive with attractiveness alone, 'attractiveness' is a significant dimension of TDC. Competitiveness is the ability of the destination to take its attractiveness to an international level to bring in more tourists. Destination attractiveness is commonly identified as a solid base for competitiveness, and the current study concentrates on this.

### ***TDC Models - Criticisms and Limitations***

In tourism literature, competitiveness is a prime factor for a destination's success. Many researchers have devised different models, variables, and indicators to study tourism competitiveness. The models can broadly be divided into three: (i) focused TDC models, which concentrate on specific facets of competitiveness (e.g., Gomezelj & Mihalič, 2008), (ii) composite competitiveness index models, which are concerned with tourism competitiveness measurement globally (e.g., Mendola & Volo, 2017), and (iii) base models. Apart from these models by researchers, in 2007, the World Economic Forum devised the Travel and Tourism Competitiveness Index (TTCI), a valuable instrument to assess competitiveness in a benchmarking context and with a macro-level perspective. Published models range from small additional contributions to the comprehension of the topic to inclusive models with an extensive list of indicators intending to prove the intricacy of the conception (Abreu-Novais et al., 2016). The models of Dwyer and Kim (2003) and Ritchie and Crouch (2003) are thought to be the most thorough theoretical and conceptual explanations of competitiveness to date (Bulatović et al., 2018).

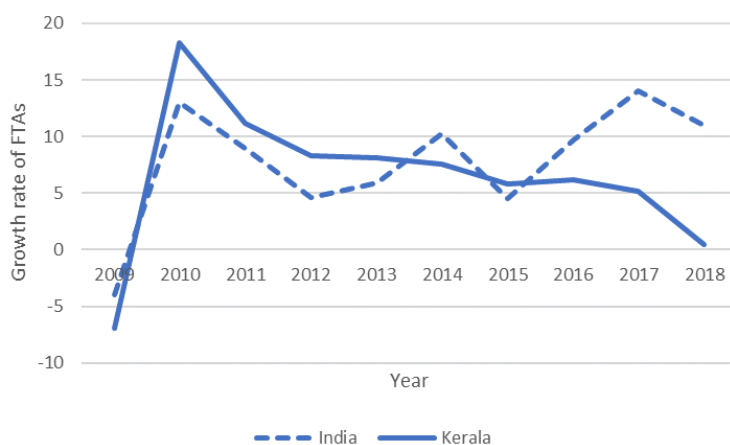
The competitiveness concept is multidimensional and can be examined from different viewpoints in diverse disciplines. Also, there is no agreement among researchers on the kind of study required to establish competitiveness factors accurately; the sample drawn; the number of indicators/variables included and their estimation; investigative methods used; the analysis level; the number, type, and characteristics of case destinations; and the segment of the industry examined (Reisinger et al., 2019). There are severe apprehensions concerning competitiveness measurement (Mazanec et al., 2007), its validation (Dwyer & Kim, 2003), and its relevance to

destinations (Croes & Rivera, 2010) which need to be addressed. No single and all-inclusive set of variables decides destination competitiveness and pertains consistently to all destinations (Goffi et al., 2019). Since the prevailing TDC models were advanced for large regions and countries (e.g., North America, Australia), they may not apply to small, maturing economies with restricted resources (Azzopardi & Nash, 2016). Perhaps the most significant shortcoming in extensive competitiveness frameworks is that they put forward comprehensive lists of TDC factors without prioritizing them. Further, the relative importance of destination competitiveness variables may not be the same across destinations (Crouch, 2011). Hence, it is required to look over the variables affecting competitiveness in specific destinations, particularly in geographically different and regional destinations within countries (Dwyer & Kim, 2003) and prioritize them (Zhang et al., 2011).

### Context of the Study

Kerala is a linear stretch of land along the southwest coast of India with an approximate population of 34 million and an area of 38,863 sq. km. It is endowed with natural attractions like backwaters, hills, waterfalls, mountains, lakes, and forests; and cultural attractions such as ancient temples, churches, mosques, palaces, various traditional art forms, events, and festivals. Despite having countless potentials and opportunities in the tourism sector, Kerala fails to take advantage of the same (Tourism trends GoK, 2016).

**Figure 1.** Annual Growth Rates in FTAs in India & Kerala (2009 to 2018), in %



**Source:** Economic Review GoK, 2019

India was ranked 10th among 185 countries in the total contribution of travel and tourism to GDP (6.8 per cent) (World Travel and Tourism Council (WTTC), 2021). India occupied the 34<sup>th</sup> position out of 140 countries in the Travel and Tourism Competitiveness Index (World Economic Forum, 2019) issued before the Covid pandemic. In India, around 105.6 million foreign tourist arrivals (FTAs) were reported in 2019, showing an increase of 5.2 per cent over the previous year, whereas Kerala's share in the country's FTAs was 8.52 per cent in 2019 over 2018 (Economic Review GoK, 2021). Despite Kerala being recognized as a popular international tourism destination, it has been witnessing a perceptible fall (Figure 1) in the growth rate of FTAs since 2010 (Economic Review GoK, 2017), with the least being recorded in 2018. While this remains a concern, the sector rebounded strongly in 2019 after the 2018 floods, with the highest growth rate in domestic and

foreign tourist arrivals in the last 24 years. Further, the Covid-19 pandemic destabilized the entire sector with a far-reaching socio-economic downturn. Around 10 per cent of the state's total revenue is from tourism, and about 23.5 per cent of jobs are directly or indirectly linked to the industry (Economic Review GoK, 2021). According to research by Kavya Lekshmi and Mallick (2020), increasing FTA by 1 per cent leads to a nearly identical gain in Gross State Domestic Product (by 0.97 per cent) in the long run, indicating that tourism has a great potential to boost Kerala's economic growth. Hence, it is imperative to focus on improving the competitiveness of the natural and cultural destination, Kerala.

The increase in FTAs in neighbouring states and other East Asian and Pacific countries with growing market share reveals that Kerala is losing the competitive battle (Tourism trends GoK, 2016). This, along with the current pandemic scenario, calls attention to the need to understand the factors that must be considered for assessing and improving the competitiveness of Kerala.

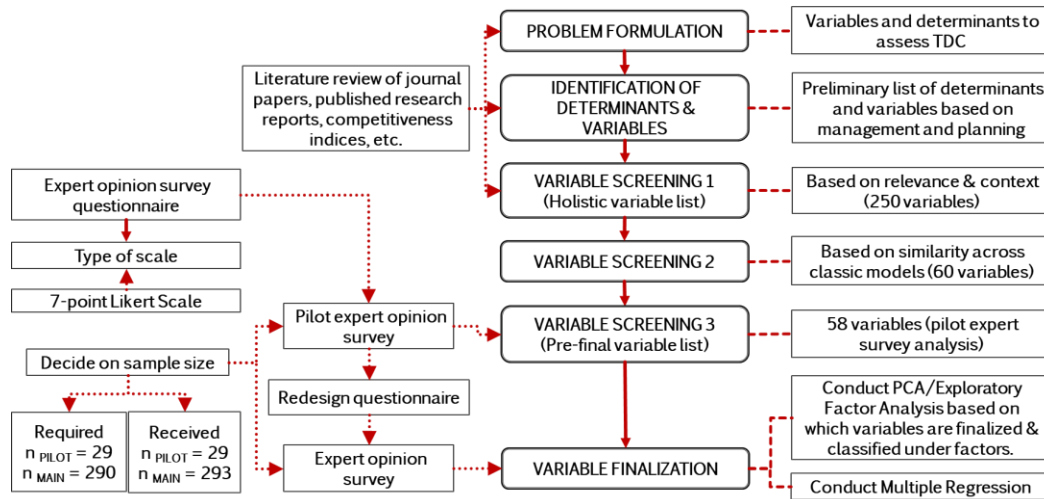
## **Methods**

The current study intends to identify and prioritize relevant factors to assess Kerala's destination competitiveness in a sub-national context relative to competing destinations as perceived by expert supply-side tourism stakeholders. The study follows a quantitative research design based on a self-administered questionnaire survey strategy as a substantial share of TDC measures are qualitative, multidimensional, abstract or imprecise. The variables for the survey were selected through step-wise screening of variables obtained from literature and through preliminary discussions with experts. An EFA was conducted to reduce study variables and find underlying factors. Finally, the result was used to build a multiple linear regression model.

### ***Variable Selection and Preliminary Screening***

The first task in developing a measure was selecting an appropriate set of variables, which would help attain unbiased results and an apt interpretation of the study. An initial set of variables was collected from published literature on various theoretical or conceptual tourism competitiveness models, empirical studies, and destination competitiveness indices based on the focus domain of management and planning. A holistic list of 250 variables was prepared by partially screening the initial set based on the context and relevance of the current study (Variable screening 1). Variables from studies that used primary data based on holistic TDC measurement were included in the list. Though the variables have been phrased, categorized, and arranged differently in different models and articles, most underlying concepts are analogous (Abreu-Novais et al., 2016). Hence the holistic list was further screened to 60 variables based on similarity across different models or indices (Variable screening 2). A pilot expert opinion survey was conducted and data analyzed (Variable screening 3), based on which a few variables were deleted or renamed, combined, and new ones added to obtain a pre-final list of 58 variables grouped into six factors (Table A1) based on the classic TDC models like Dwyer and Kim (2003) and Ritchie and Crouch (2003).

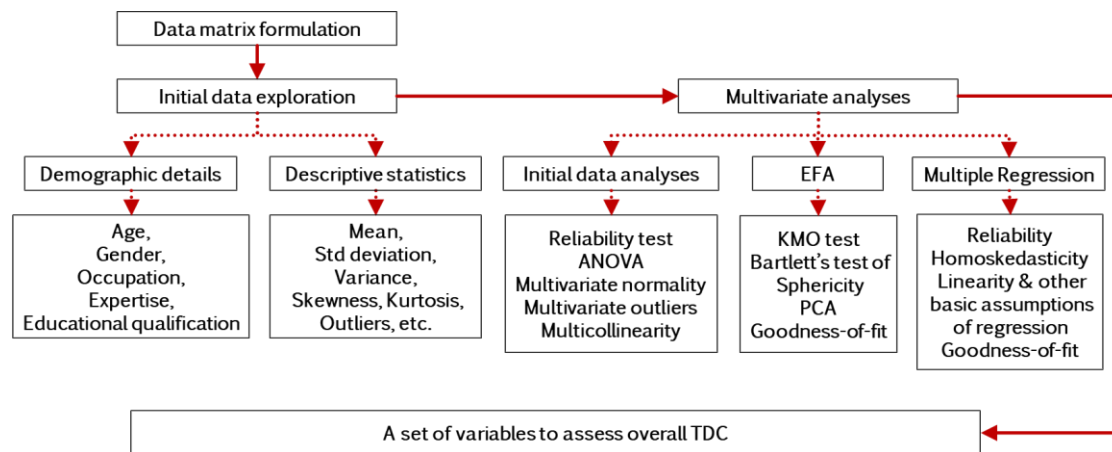
**Figure 2. Methodology**



Though substantial similarity is expected between variables influencing competitiveness and theoretical variables in the base models of TDC, there can be some differences because of the aggregation issue. Finally, the pre-final variable list was subjected to the main primary survey to finalize the variables for measuring competitiveness. Figure 2 represents the overall methodology followed in the study.

For empirical analysis, the paper used EFA to find the underlying factors. The individual effect of the independent variables (factors obtained in EFA) on the dependent variable overall TDC was further measured using regression analysis. Figure 3 represents the detailed process of variable finalization through factor analysis and regression.

**Figure 3. Variable Finalization Process**



**Instrument and Measures**

A self-administered questionnaire survey was conducted amongst the tourism experts in the destination region Kerala to check the relevance/appropriateness of variables in measuring the TDC of the case region. Likert scale rating, ranging from extremely low relevance (1) to extremely



high relevance (7), was applied in the study, allowing maximum response variability. Open-ended questions allowing respondents/experts to provide feedback or suggestions were included under each factor in the questionnaire. The questionnaire specified, "Kerala as a tourism destination brand and not the state".

### ***Sample***

The survey was conducted on experts among tourism supply-side stakeholders as they are the ones who know about the destination as well as the residents' and tourists' interests. The sampling frame included experts from different domains of tourism, such as consultancy and business managers in the sector (30%); tourism professionals and planners (public/private sector) (30%); academicians/researchers in tourism (20%); and tour agents and operators (20%) in Kerala, to get balanced feedback. The respondents were selected through judgmental sampling (Azzopardi & Nash, 2016). According to the rule of thumb of factor analysis, the sample size required is a minimum of 5 responses per variable (Mooi & Sarstedt, 2011). Thus, the sample size needed was 290 for the main survey.

### ***Survey Procedure***

Ten tourism planning experts reviewed the scale's content and face validity, and the questionnaire was improved and structured based on that. Before conducting the main survey, a pilot survey was done to enhance the quality of data gathering. 10% of the sample size is adequate for a pilot study as per Azzopardi (2011), and hence a total of 29 experts with more than ten years of experience were surveyed using the snowball technique. Based on the pre-tests and pilot survey, the final version of the questionnaire was prepared with a few modifications, and the main survey was administered in three months (from August 2019 to October 2019). The final questionnaire was sent out to 350 potential respondents (those with more than five years of experience in the industry) to accommodate an additional 20% of the required sample size through online and offline modes to gather maximum responses within a limited time frame.

### ***Tools and Techniques Used***

The response values of experts were formed into a matrix which is further analyzed. Initial data exploration and multivariate analyses were conducted following the generally undertaken data analyses for social science and questionnaire survey research. EFA was performed to generate a small set of factors that contain most of the original variables' information but are mutually uncorrelated (Hair Jr et al., 2014). Further, hypotheses are framed to test the relative strength and the nature of the relationship between the factors (independent variables) derived through EFA and the overall TDC (dependent variable). The hypotheses thus framed are tested using multiple linear regression analysis. Details of the tests/tasks undertaken, range, and preconditions of various multivariate data analyses, EFA, and regression analysis are provided in Table A2 (Sl. No.1-26).

## **Results**

### ***Respondents' Profile***

Out of the 350 questionnaires distributed, 307 questionnaires were collected and analyzed, indicating an effective response rate of about 88%. After deleting the duplicate and incomplete

ones, 293 usable responses were obtained. Out of the total respondents, males constituted 78%, and the rest were females (22%). Maximum respondents (42%) were from the 31-40 age group. Most responses were received from tourism professionals and planners (35%), and the least from academicians/researchers (15%). All respondents had more than five years of experience in the tourism field, and almost 50% had more than 15 years of experience. Most respondents were postgraduates (76%) (Table 1).

**Table 1:** Demographic Profile of Experts

Demographic/ Geographic variable	Category	% of respondents	Frequency
<b>Gender</b>	Male	78	229
	Female	22	64
<b>Age group</b>	21-30	13	38
	31-40	41	120
	41-50	28	82
	51-60	17	50
	61-70	1	3
	<b>Qualification</b>	Undergraduate	8
	Postgraduate	76	223
	PhD	16	47
<b>Expertise</b>	Tourism consultancy/business managers	32	94
	Tourism professionals/planners	35	102
	Tourism academicians/researchers	15	44
	Tour agents/operators	18	53
<b>Experience in the industry</b>	6 – 15	43	126
	16 – 25	49	144
	>25	8	23
<b>Place of residence</b>	Kerala	93	272
	Outside Kerala (other states in India)	7	21

### *Data Analysis*

The internal consistency of data collected through the questionnaire was tested using Cronbach's Alpha and was found to be 0.899, which is satisfactory. The coefficient of variation (CoV), which checks if the data is valid and reliable, was less than 0.3 in all the cases; hence, no variable was removed. The assumption of homogeneity of variance across the four expert groups was checked using Levene's test before conducting ANOVA and was found to be non-significant ( $p = 0.659$ ), which means equal variance is observed. No statistically significant difference was observed between responses of expert groups as determined by one-way ANOVA ( $F = 0.661$ ,  $p = 0.578$ ). Hence it was concluded that expert groups were homogenous, and the selection of experts was not affecting the data.

Further, Mahalanobis distance (D2) and the p-value of chi-square distribution were calculated for each case. There was no multivariate outlier since the p-value was greater than 0.001 in all cases.

While plotting Mahalanobis distance (D2) against derived chi-square values in a scatter plot, very few deviations from a straight line were observed, satisfying multivariate normality.

The variables 'environmental quality' and 'proper waste disposal'; and 'quality of water supply' and 'basic services infrastructure' were extremely correlated while analyzing Pearson's correlation coefficient. Since there is no definite agreed-upon cut-off value for correlation coefficient deciding on collinearity (Mooi & Sarstedt, 2011), all variables were checked for multicollinearity by analyzing the collinearity statistics. Eleven variables had a variance inflation factor (VIF) >10. Based on the two analyses, one among each pair of highly correlated variables was removed, and the other retained before proceeding for further analyses (Table 2).

**Table 2:** List of Variables Having Multicollinearity

Variables to be retained	Variables to be removed
Natural beauty	Natural tourism products
Environmental quality	Proper waste disposal
Transportation facilities/accessibility	Location of destination
Absence of anti-social activities	Absence of corruption
Basic services infrastructure	Quality water supply
Basic services infrastructure	Electricity supply

*Exploratory Factor Analysis (EFA)*

EFA was performed with fifty-two variables using SPSS Version 24. The KMO value was 0.627, indicating the adequacy of the sample to extract results. Bartlett's test of sphericity was significant ( $p < 0.05$ ), indicating a unidimensional solution. Both these results reveal that the dataset was suitable for performing EFA. While looking at correlation coefficients, few individual correlations were lower than 0.3. The factor analysis stops being applicable only when all the correlations are around zero; hence, this is not necessarily problematic (Mooi & Sarstedt, 2011). The statistical significance of each correlation coefficient was checked by evaluating the anti-image correlation matrix. None of the MSA values was below the threshold level. Thus, no items were removed from the analysis.

While looking at the results of PCA, eleven factors were found to have an Eigenvalue greater than one, jointly explaining 73.6% of the total variance. Further, factors were rotated, choosing Varimax rotation with Kaiser normalization, and rotation converged in 7 iterations. Each variable was assigned to a particular factor based on its maximum absolute factor loading in the rotated component matrix (Table 3).

**Table 3.** Factors Derived From EFA and Rotated Component Matrix

Factors	Variables	Component										
		1	2	3	4	5	6	7	8	9	10	11
<b>Destination management (DMT)</b>	Crisis management	.853						.143				
	Core resource management	.845					-.125		.101			
	Private sector role	.838							.116			
	Human resource management	.823										
	Public sector role	.800	-.105					.153				
	Finance & venture capital	.799						.195	.150			
	Visitor management	.784										
<b>Tourism environment (TE)</b>	Quality of food & beverages		.880									
	Amenities at tourist spots		.831	.124								-.132
	Variety of accommodations		.823				.120					
	Quality of accommodations		.792				-.166		-.147			
	Reliability of tour operators		.757						-.132			
	Tourist information/guidance	-.131	.718								.111	
	Customs & entry permit/visa		.674							.189		-.352
<b>General infrastructure (GI)</b>	Transport facilities/accessibility			.853	.115				.116			
	ICT			.839					.104	.189		
	Health/medical facilities			.823						-.101		
	Financial institutions			.814	.114							.103
	Social spaces avenues			.753								
	Basic services infrastructure			.725					-.105	.168		
<b>Tourism conditioning factors (TCF)</b>	Less crowding at destination		.182		.835							.109
	Absence of general strike (hartal <sup>1</sup> )			.142	.810		.124					
	Proximity to other destinations				.797		.163					.192
	Navigation within the destination			.155	.776				.166			
	Absence of anti-social activities				.606				-.153		.121	
	Diversity of tourism products	-.156			.593				.131			
<b>Inherited created resources (ICR)</b>	Natural beauty			.101		.897				.107		
	Cultural & historic attractions					.889	.178					
	Climatic conditions				.107	.886						-.119
	Symbiotic tourism products	-.140				.795		.168				
<b>Local support (LS)</b>	Resident support for tourism					.102	.876					
	Hospitality						.845		.104	.148		
	Host-guest communication			.112			.840			-.115		
	Political stand towards tourism				.176		.809	-.118				
<b>Destination planning &amp; development (DPD)</b>	Vision & policies							.881			.110	
	Destination audit	.172						.857		.171		
	Monitoring & evaluation				-.112			.837				
	Destination development		-.103					.778	-.172			

<sup>1</sup> Hartal is the concerted cessation of work and business especially as a protest against a political situation or an act of government (Merriam-Webster).

<b>Events &amp; activities (EA)</b>	Special events/festivals/fairs			.878		
	Shopping opportunities		.125	.822		
	Methods of work/technique	-.179		.787		.172
	Entertainment & nightlife			.744	.111	.314
<b>Destination marketing (DMG)</b>	Positioning/branding	.159	.108		.848	
	Marketing promotion			-.126	.825	
	Destination image			.175	.803	-.106
	Destination authenticity/uniqueness			.139	.710	
<b>Cost of trip (CT)</b>	Cost of travel			.150		-.869 .123
	Value for money		.121			-.836
	Cost of accommodations	-.130		.111		-.823
	Cost of food & beverages	-.154	.142			-.802
<b>Destination safety &amp; quality (DSQ)</b>	Environmental quality		.104			.804
	Public safety/security		.148	.197		.784

Source: Output from SPSS

An umbrella term was identified for each factor that best portrays the variables associated with that particular factor. The eleven factors derived from EFA are given in Table 3.

The reliability and average variance extracted (AVE) of factors derived through EFA were greater than 0.7 and 0.5, respectively (Table 4), which ensures construct validity. The reproduced correlation matrix was checked, and its congruence with the initial correlation matrix was found to be 15%, which partly confirms the model fit. Finally, the communality was checked to see how much of each variable's variance is reproduced through factor extraction, and all the variables were found to have values >0.3. Thus, the goodness-of-fit of the factor solution was found to be satisfactory.

**Table 4:** Cronbach's Alpha and AVE Values of Different Factors of TDC

Factors	Cronbach's Alpha ( $\alpha$ )	AVE
Destination Management	0.807	0.673466
Tourism Environment	0.815	0.616057
General Infrastructure	0.795	0.644014
Tourism Conditioning Factors	0.726	0.551599
Inherited & Created Resources	0.803	0.752987
Local Support	0.747	0.710371
Destination Planning & Development	0.766	0.704116
Events & Activities	0.745	0.654868
Destination Marketing	0.777	0.637160
Cost of Trip	0.792	0.693648
Destination Safety & Quality	0.733	0.630536

Source: Output from SPSS

## *Hypotheses*

In the light of the literature review, it is presumed that the eleven factors resulting from EFA are predictors of destination competitiveness. The study envisaged that 'inherited and created resources' is the most crucial factor determining the competitiveness of the tourism destination. Additionally, it is assumed that all the predictors except 'cost of trip' are positively related to the overall TDC. Thus, the hypotheses are as follows:

**H1:** All factors resulting from EFA significantly affect 'Overall TDC'.

**H2:** The 'Inherited and created resources' at the destination has the highest effect on the dependent variable 'Overall TDC'.

**H3:** All the constructs, except 'Cost of Trip', are positively related to the Overall TDC.

## *Regression Analysis*

The dependent variable 'overall TDC' was measured by statements asked the experts on five variables based on the classical definition of TDC by Ritchie and Crouch (2003) - 'attractiveness of destination' (Miličević et al., 2017); 'quality of life of the resident community' (Dwyer et al., 2016; Kubickova et al., 2017); 'quality of experience in the destination' (Goffi & Cucculelli, 2014); 'economic prosperity of the destination' (Fletcher et al., 2018); and 'comparative performance of destination region Kerala relative to similar destinations'. The eleven factors produced by EFA were the independent variables.

The standard deviations of both dependent and independent variables were positive with significant variation. Also, all the correlation coefficients were above 0.3, implying that a minimum correlation exists. While checking the linearity assumption using ANOVA, all independent variables were identified to have a linear relationship with the dependent variable at  $p > 0.05$ . No heteroskedasticity was observed. The residual statistics were found to be adequate. Significantly, the mean of the residuals was zero. Moreover, the calculated Durbin-Watson statistic was 1.362 (Table 5). It was found between the critical values 1.264 and 1.798, from which it was assumed that the residuals are independent. The normality of the residuals was checked, and the errors were approximately normally distributed. The estimated outcomes were in agreement with the fundamental assumptions for carrying out the regression analysis and hence statistically robust.

Table 5 and Table 6 report the results of the regression analysis. The independent variables in the theoretical model explained 60.9% of the variability of the destination's overall competitiveness.  $R^2$  was 0.609, much above the value of 0.30, which is typical for cross-sectional research. This  $R^2$  value was close enough to similar studies on TDC, as seen in Reisinger et al., 2019 and Michael et al., 2019, which were 0.605 and 0.667, respectively. The regression model (F-value) was significant at 5%.

**Table 5:** Overall Fit of the Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change Statistics					Durbin-Watson
					R Square	F Change	df1	df2	Sig. F	
1	.781 <sup>a</sup>	.609	.571	.54739	.609	5.726	11	77	.000	1.362

a. Predictors: (Constant), DMT, TAF, IR, EA, CT, TE, LS, DMG, DSQ, DPD, GI

b. Dependent Variable: OT

Source: Output from SPSS

**Table 6:** ANOVA F-Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.873	11	1.716	5.726	.000 <sup>b</sup>
	Residual	23.072	77	.300		
	Total	41.945	88			

a. Dependent Variable: OT

b. Predictors: (Constant), DMT, TAF, IR, EA, CT, TE, LS, DMG, DSQ, DPD, GI

Source: Output from SPSS

The effects of independent variables on the dependent variable were considered separately (Table 7). All independent variables significantly affect the overall TDC and hence fail to reject H1. The variable 'destination safety and quality' had the highest impact on the overall TDC as we look at the absolute standardized b value. Hence, the study rejects H2. All the independent variables except 'cost of trip' had a positive b value, thus failing to reject H3.

**Table 7:** Effects of the Independent Variable

Model	Unstandardized		Std. Beta	t	Sig.	Correlations			Collinearity	
	B	Std. Error				Zero-order	Partial	Part	Tolerance	VIF
(Constant	10.358	1.566		6.613	.000					
ICR	.165	.086	.194	2.227	.029	.155	.246	.190	.953	1.050
EA	.159	.073	.190	2.165	.033	.217	.240	.184	.938	1.066
DSQ	.246	.080	.272	2.792	.007	.048	.303	.238	.762	1.312
TE	.224	.082	.269	2.985	.004	.222	.322	.254	.890	1.123
CT	-.166	.091	-.209	-2.375	.020	-.244	-.261	-.202	.937	1.067
GI	.215	.082	.226	2.310	.024	.144	.255	.197	.759	1.318
TCF	.146	.082	.180	2.018	.047	.222	.224	.172	.911	1.098
LS	.193	.062	.221	2.424	.018	.157	.266	.206	.875	1.144
DPD	.189	.075	.211	2.206	.030	.282	.244	.188	.790	1.266
DMG	.151	.082	.185	2.034	.045	.229	.226	.173	.875	1.142
DMT	.166	.067	.196	2.188	.032	.193	.242	.186	.901	1.109

a. Dependent Variable: OT

Source: Output from SPSS

The regression model which could provide insight into the specific effects of the eleven independent variables on the overall TDC is as follows:

$$\text{Overall TDC} = 10.358 + 0.165 \text{ IR} + 0.159 \text{ EA} + 0.246 \text{ DSQ} + 0.224 \text{ TE} - 0.166 \text{ CT} + 0.215 \text{ GI} + 0.146 \text{ TCF} + 0.193 \text{ LS} + 0.189 \text{ DPD} + 0.151 \text{ DMG} + 0.166 \text{ DMT}$$

## Discussion

The EFA and regression analysis results provide fascinating insights into the factors influencing the competitiveness of nature and culture-based destination regions, briefly discussed below.

Factor 1: DMT - Destination Management (12.13%). This primary factor contains maximum variables, accounting for a large variance. It offers the seventh-highest impact on the regression model. Interestingly, the respondents perceive 'destination management' as a combined effort of the public and private sectors, but they view 'destination policy and management' variables differently. Most of the rudimentary variables here refer directly to management matters. A well-managed destination is not only good for the advancement of tourism in a sustainable way but also the best destination advertisement.

A destination is expected to protect the integrity of its products and the same time, guard against its competitors (Murphy, 1985). The respondents expect that the programs, structures, systems, and processes should be profoundly practical and manageable by people, organizations, and their collective action, thus representing the scope for managing a destination's competitiveness. The experts believe that Kerala's public sector, private sector, and destination management organizations (DMO) can significantly improve competitiveness by improving their roles as infrastructure developers, tourism resource protectors, human resource developers, tourism promoters and policy formulators, and inter-department coordinators. The core resources of the destination, such as natural, cultural, historical, and creative resources, are the fundamental reasons for travel to the destination and need to be managed carefully and effectively to remain competitive. According to Mihalič (2013), if the supply-side maintains high-quality tourism resources, they will become significant tourist attractions. Human resource management, which concentrates on the quality of service personnel, training and education, and an efficient labour market, is a chief destination management element. Kerala's tourism industry is constantly and rapidly evolving in terms of technology development, innovation, and customer service; hence, ongoing education and training programs are essential and a requirement for the destination to be competitive. Kerala lacks a competent workforce in the tourism industry (Economic Review GoK, 2021). The sector should focus on training sessions in soft skills, communication, leadership, empowerment, creativity, and innovation; and also cover topics related to tourism key regulations, significant events happening in the destination, and changing perspective of tourists; promoting the development of skilled/ competent human resource and thus meeting the visitor expectations (Nair, 2018).

'Crisis management' in the destination is the variable with the highest loading on the factor. The experts foresee the importance of effective crisis management in the destination since the Kerala tourism industry has been experiencing several crises in the past few years, such as floods and pandemics. Tourism destination management stakeholders play a vital role in developing disaster management strategies for rescue, restoration, information and communication, and resilience (Nair & Dileep, 2020). Crowd catastrophes in Kerala, particularly recurring instances at religious tourism spots, urge the development of a crowd management system by analyzing carrying capacity based on the location, event/ festival, participants, and visitors (Illiyas et al., 2021).



Factor 2: TE – Tourism Environment (11.91%). This factor also accounts for approximately equal variance as Factor 1 and consists of seven variables. It offers the third-highest impact on the model. The destination's attractiveness is enhanced by both general and tourism infrastructure, making it more competitive. The tourism environment comprises variables related to easy availability, quantity and quality of tourism-specific infrastructures and services, mainly to aid tourists and is considered an imperative component of destination attractiveness. In addition to the vast resources and attractors a destination possesses, it also requires the sustenance of other elements to be adequate for receiving tourists (Gunn & Var, 2002). Hence, though Kerala holds many inherited and created resources and attractors to satisfy nature and culture-oriented tourists, the industry also requires enhanced support of the tourism-specific infrastructure such as quality accommodations, food, beverage, and other amenities to house tourists.

Factor 3: GI – General Infrastructure (9.72%). The third component comprises six items and is a significant factor in effective tourism development. It offers a base for booming tourism upon which the tourism-specific infrastructure is built. Air connections, as well as the availability, affordability, efficiency, reliability, and diversity of ground transportation, and various visitor-oriented services (e.g., information services, banks, IT) are important factors that support a destination's ability to attract foreign tourists, enabling it to compete in the global market (Crouch, 2011). Kerala is a linear destination stretch with plenty of tourist spots, particularly in coastal and hilly areas. Hence infrastructures are fundamental for the advancement of tourism in such locations. Tourist visits produce requests for ICT infrastructure and basic infrastructures such as water supply, sanitation, and waste systems. Additionally, tourists mandate public services such as health and medical facilities. Hence proper planning of the general infrastructure facilities in the destination is highly significant, and the factor offers the fourth-highest impact on the regression model.

Factor 4: TCF – Tourism Conditioning Factors (7.35%). The fourth factor consists of six variables and is the one with the most negligible impact. It either improves or limits competitiveness by controlling the rest of the factors. Closeness to other tourist places has a significant role in the growth of a destination (Gunn & Var, 2002). 'Proximity to other destinations' and 'navigation within the destination' are infrastructure-related and linked to inter and intra-destination accessibility, respectively. These variables leverage the effect of general infrastructure facilities on competitiveness.

Similarly, an overcrowded destination limits its attractiveness. General strikes are frequent in Kerala, and the variable 'absence of general strike' distinctly pertains to destination Kerala. A tourist is quite a stranger in a destination, and the sudden strikes restrict his liberty of movement. Also, anti-social activities show a growing trend in Kerala. In all such situations, the destination's image is affected, which impacts tourism growth.

Factor 5: ICR – Inherited and Created Resources (6.64%). The fifth factor is closely associated with the demand factor and offers the second-highest influence on the regression model. The quality of the natural and cultural/heritage resources affects the success of a tourism destination (Huybers & Bennet, 2003). Resources are often the key drivers of visiting a destination (Ritchie & Crouch, 2003) and are the fundamental reason tourists prefer Kerala to other destinations. Natural beauty is the foremost attraction of destination Kerala. A significant segment of international tourists is cultural visitors (Richards, 2007); hence, the experts see great opportunities

in cultural/ heritage tourism products. Culture is the second influential factor of destination appeal, and the cultural and heritage attractions pull potential visitors to a destination (Murphy et al., 2000). Kerala's rich culture and heritage must be sustained, and diverse promotion strategies to be executed by distinctly portraying and marketing the same.

Factor 6: LS – Local Support (5.83%). This factor is represented by four variables and has the fourth-highest effect on the model. The hospitality of locals, defined as 'the crux of tourism' (Cucculelli & Goffi, 2016), is a significant component of tourist attraction. Although Kerala allures tourists with different characteristics, there is no organized agenda for creating awareness in the local communities about the importance of tourism to our economy (Fletcher et al., 2018) and how our culture, heritage, and art are making an influence on the visitors. If the total potential contribution of the tourism industry to the local economy is to be understood, it is vital that the industry be tuned, maximum possible, by the local producers (Wall & Mathieson, 2006). The seasonality, strict working hours, and low wages make tourism careers often perceived as temporary, which has to be seriously addressed to improve public participation and support. The political stand of state and local governments towards tourism and their coordination is an essential aspect of destination development (Kubickova & Martin, 2020) and improving competitiveness.

Factor 7: DPD – Destination Policy and Development (5.13%). The seventh component aims to accomplish explicit objectives pertinent to the leisure industry in the long term and offers the fifth-highest influence on the model. Tourism planning should be inclusive and cohesive so that a destination's resources, services, facilities, and infrastructures are interconnected along with its natural and societal setting (Hall, 2007). Tourism planning is the foundation for the success and competitiveness of any destination. Though Kerala already has a well-articulated vision and strategic plan for destination development, those being implemented long-term need to be audited at specific intervals. This helps assess the availability and quality of inventories of the destination's most significant attractions, facilities, services, and experiences. The quality of development plans and their systematic translation into reality need to be checked. The tourism product performance and visitor satisfaction are to be tracked, and strategy to be fine-tuned to improve destination performance through proper monitoring and evaluation. Tourism impacts must also be monitored regularly to preserve the destination's attractions.

Factor 8: EA – Events and Activities (4.72%). The eighth component comprises four variables and is found to be significant in measuring TDC. The factor is of growing importance as the tourists increasingly seek the 'authentic' and 'real' in search of experiences that outdo the former sedentary tourism (Poon, 1993). In seasonal tourist destinations, events and activities can extend and expand seasonality. Kerala being a seasonal destination, events and activities can help attract tourists during the offseason.

Kerala thrives with many cultural and historical events; carnivals; festivals; fairs; art, literary and cultural exhibitions; and culinary festivals year-round. Periodical fairs and festivals are also arranged. Kerala has village communities skilled in indigenous handicrafts using wood, ceramics, and metals. Destination's aboriginal works and techniques in boat making, mirror making, coconut climbing, and farming are outstanding. Though such events could be highly interesting for visitors, they are not much exploited for tourism and remain strange for tourists. Shopping tourism can act as a channel to rejuvenate traditional commercial centres and rural areas (Jansen-Verbeke, 1991).

The destination-specific events and activities may be vital in the destination's competitive policy to attract demanding and active tourists.

Factor 9: DMG – Destination Marketing (3.99%). Four variables refer to the ninth factor and significantly impact the destination competitiveness model. The positioning, segmentation, and communication strategies focusing on increasing visitor interest and expenditure in a highly competitive tourism market are critical. Though tourism marketing in Kerala has gathered many awards and recognitions, the effort must be continued as this is the best way to position the destination in the competitive international tourist market. Also, persistent attention is needed to maintain tourism promotional activities through infrastructure development and improvement in host's attitudes. Tourism locations are being promoted through social media since tourists have evolved into content creators and advocates (Kumar et al., 2021). Kerala uses apt social media strategies such as responding to Facebook users swiftly, using informational posts and films on its rich natural/cultural/heritage resources, creating online events, allowing tourists to share their images and publishing only truthful information. In this post-pandemic scenario, effective post-disaster marketing strategies need to be implemented to aid in rebuilding the destination (Nair & Dileep, 2020).

Factor 10: CT – Cost of Trip (3.53%). The tenth factor with four variables offers the sixth-highest impact on the competitiveness model and is the only variable negatively related to the overall TDC. It means that the increased cost of travel tends to make the destination less competitive. The choice tourists make in opting for a destination is determined based on the price to be paid to visit and explore the destination (Crouch, 1992). A key element of destination appeal is the reduced cost of amenities and services within the destination compared to similar destinations (Inskip, 1991). Decreasing currency value, increased cost of commodities, high taxes, and living costs can affect a tourist's readiness to visit a destination and, in turn, its competitiveness (Cvelbar et al., 2016). The cost of accommodation and travel is much higher in Kerala compared to the neighbouring competing destinations. Hence the cost factor is to be reduced to be competitive.

Factor 11: DSQ – Destination Safety and Quality (2.67%). This factor explains the least variance and consists of only two variables. Though factors defined by two observed variables are undesirable as they are considered conceptually weak (Mulaik, 2010), this is still considered as the individual loading of both the variables is very high on the factor. Also, this factor has the highest effect on the model as we observe the absolute b value, which means it has the strongest association with overall TDC.

Environmental quality highly contributes to the attraction and competitiveness of the destination (Michael et al., 2019). A polluted environment and filthy amenities jeopardize tourists' health. In South Kerala's backwater attractions, improper waste management remains a significant concern (Joseph et al., 2021). Hence, to attract tourists and thus enhance the competitiveness of Kerala, the environmental quality needs to be improved drastically.

Risk and safety concerns are strong predictors of not opting for a destination for holidays (Sönmez & Graefe, 1998). Public safety can be interpreted as the protection during calamities/hazards and the safekeeping of the tourists in the destination. Landslides, floods, and other natural disasters occur frequently and intensively in Kerala during the monsoon season, and few tourist spots are estimated to be at high risk. Additionally, the security, mainly of women in Kerala, is endangered

these days. While considering the above facts, the variable 'public safety/ security' is highly prioritized. Thus, Kerala's security and environmental quality have become a severe problem that may hinder many tourists from visiting the destination. Safety, security and environmental quality are all significant variables attracting tourists to a destination, and the findings are consistent with the studies of Neto et al. (2020) and Woyo and Slabbert (2021).

## **Conclusion**

The research is built on the foundation of previous quality studies and empirically identifies the factors and variables that ultimately measure the TDC of natural and cultural destination regions, depicting the case of destination brand Kerala, India. Before this, no studies empirically examined the contribution of TDC factors to destination competitiveness in the context of Kerala. The supply-side tourism experts' perception regarding the relevance of variables was recorded, and EFA was conducted to find the factors underlying the extensive set of variables. The study also tested the association of various factors of TDC among each other and with the overall TDC. Though the destination is celebrated for its 'Inherited and created resources', the study identifies that 'Destination safety and quality' has the highest impact on the TDC of Kerala.

The study helped to narrow down the research gap in the domain. It also helped to highlight the destination's strengths, weaknesses, opportunities, and threats. Additionally, a theoretical underpinning is established for future research and model comparisons. Moreover, the study helped spotlight the destination brand, Kerala, in the TDC research platform. The practical contribution is that the study provides insights from the service providers' perspectives and facilitates industry and government authorities to enable the destination to compete internationally by monitoring competitiveness, adopting strategies for improvement and prioritizing the allotment of resources. The model could be a reference for natural and cultural destinations looking to enhance their marketing and management approaches while urging more innovation and progress.

## ***Theoretical Implications***

The study has several contributions. The study complements the growing literature on tourism competitiveness from a theoretical perspective. The findings show that the factors and variables appropriately determine a natural and cultural destination's competitiveness. The study rejects the argument that the factor 'inherited and created resources' is the fundamental reason for attracting tourists and hence the most critical factor of destination competitiveness. Though 'inherited and created resources' is among the principal factors of TDC, 'destination safety and quality' has the highest significance in assessing the TDC of Kerala. The study fails to reject the hypothesis that all predictors, except 'cost of trip', are positively related to overall TDC. The work reinforces the notion that a destination's general and tourism-specific infrastructure adds to its attractiveness and is an essential component of its competitiveness (Assaf & Josiassen, 2012).

## ***Practical Implications***

It is evident from the research findings that there are some factors Kerala has to improve upon to increase its tourism competitiveness. Though Kerala is making many attempts to augment its tourism products, the destination is still incompetent to effectively use its natural resources and promote products that exhibit its heritage and culture. Since the destination accepts visitors from

diverse nationalities, better alertness and regard for the resident culture must be created, eventually enhancing the host-guest interaction. Likewise, the destination management organizations should extensively promote and incite a positive image of the destination amongst potential tourists by providing adequate information about Kerala as a tourist destination, which is a prerequisite to opting for and visiting the destination. The destination's social, cultural, economic, and political stability should be profoundly publicized.

Many developmental and promotional tourism activities are managed and supervised by people with little expertise in using quality technology. The destination should encourage its residents with cultural awareness to take up tourism and hospitality jobs to promote its cultural assets. Increasing currency rates and the cost of products and services at the destination, as well as high taxes and the cost of living, can all impact tourists' willingness to visit a destination and perception of the destination's competitiveness. Hence, cost-effective accommodations, travel facilities, and support services should be provided. Since only safe destinations can effectively compete for visitors, safety in the destination and the security of its hosts and guests should be prioritized. The general strike (hartal) seems not to deter tourists from visiting Kerala, and a certain amount of challenges at the destination are expected to enhance the tourist experience (Thomas & Jose, 2021).

### ***Limitations and Future Studies***

Kerala is not a homogeneous destination, and the regional variances between tourist spots within the region were not analyzed. Instead, the aim was to study the destination from a broad regional perspective. Another limitation is that only those variables likely to affect the tourism competitiveness of a particular region are considered in the study. Hence the study outcome may not be generalizable. Forthcoming studies may address the inclusion of other variables. Though the explanatory power of factors in the model (Table 7) seems to be a little low, capturing the same appears satisfactory when considering other factors affecting competitiveness, its multiple nature, and similar studies on TDC. Another issue underlying this scale involves the lack of integration of objective and subjective variables. The findings could have been biased by the background of the supply-side experts, as data was collected in Kerala, and this study did not test cross-cultural reliability and validity. Future studies may test the model in various cultural and religious contexts. The developed scale may be validated with demand-side stakeholders. These limitations may be addressed in future studies on TDC.

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## Appendices

**Table A1.** Factors and Variables From Literature After Partial Screening

Sl. No	Variables	Factors
1	Natural beauty	<b>Inherited and Created Resources</b>  (ICR)  <b>10 variables</b>
2	Natural tourism products	
3	Symbiotic tourism products	
4	Climatic conditions	
5	Environmental quality	
6	Cultural & historic attractions	
7	Methods of work/technique	
8	Special events/festivals/fairs	
9	Entertainment & nightlife	
10	Shopping opportunities	
11	Variety of accommodations	<b>Tourism Environment</b>  (TE)  <b>11 variables</b>
12	Quality of accommodations	
13	Cost of accommodations	
14	Quality of food & beverages	
15	Cost of food & beverages	
16	Customs & entry permit/visa	
17	Tourist information/guidance	
18	Reliability of tour operators	
19	Location of destination	
20	Cost of travel	
21	Amenities at tourist spots	
22	Financial institutions/currency exchange facilities	<b>General Infrastructure</b>  (GI)  <b>10 variables</b>
23	Information and communication technology (ICT)	
24	Public safety/security	
25	Health/medical facilities	
26	Transportation facilities/accessibility	
27	Social spaces/avenues	
28	Proper waste disposal	
29	Electricity supply	
30	Quality water supply	
31	Basic services infrastructure	
32	Hospitality	<b>Qualifying &amp; Augmenting factors</b>  (QAF)  <b>14 variables</b>
33	Host-guest communication	
34	Proximity to other tourist destinations	
35	Value for money	
36	Destination authenticity/uniqueness	
37	Diversity of tourism products	
38	Destination image	
39	Navigation within the destination	
40	Less crowding at destination	
41	Absence of general strike (hartal)	

42	Absence of anti-social activities	
43	Absence of corruption	
44	Resident support for tourism	
45	Political stand towards tourism	
<hr/>		
46	Vision & policies	<b>Destination Strategy &amp; Development</b>
47	Destination development	
48	Destination audit	<b>(DSD)</b>
49	Positioning/branding	
50	Monitoring & evaluation	<b>5 variables</b>
<hr/>		
51	Public sector role	
52	Private sector role	
53	Marketing/promotion	<b>Destination Management</b>
54	Finance and venture capital	
55	Human resource management	<b>(DM)</b>
56	Visitor management	
57	Core resource management	<b>8 variables</b>
58	Crisis management	
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**Table A2.** Multivariate Analyses, Description, its Acceptable Range and References

Sl.No.	Test/Task	Description	Range/Pre-condition	Reference
1	Cronbach's Alpha	Internal consistency reliability	0-1 Generally acceptable: >0.7 Exploratory: >0.6 Advanced research: >0.8	(Cronbach, 1951)
2	Coefficient of variation (CoV)	Checks consistency	Qualitative study: <0.3	(Brown, 1998)
3	Levene's test	Assesses homogeneity of variance based on means across different groups	Precondition of ANOVA. p<0.05, unequal variance across groups. p>0.05, equal variance	(Mooi & Sarstedt, 2011)
4	One-way ANOVA	Checks statistically significant differences between responses of expert groups	F-value to be significant at <0.05 level	(Hair Jr et al., 2014)
5	Mahalanobis distance (D2)	To flag multivariate outliers by calculating the p-value of the area in the right tail of $\chi^2$ distribution	Outlier present if p <0.001	(Tabachnick & Fidell, 2012)
6	Multivariate Q-Q plot	Scatterplot of Mahalanobis distance (D2) & derived $\chi^2$ . To check multivariate normality	Deviation from a straight line indicates multivariate non-normality	(Thompson, 1990)
7	Pearson correlation analysis	Check correlation between two interval or ratio scaled variables	No definite agreed-upon cut-off value for r. Generally, if r >0.5: there is strong correlation (chance for multicollinearity) 0.3 < r < 0.49: moderate correlation r < 0.3: weak correlation	(Mooi & Sarstedt, 2011)
8	Collinearity statistics: Variance Inflation Factor (VIF) & tolerance (1/VIF)	Check for multicollinearity	If r > 0.5, go for collinearity statistics to check for multicollinearity. If VIF > 10 or tolerance < 0.1, multicollinearity present	
<b>Exploratory Factor Analysis (EFA)</b>				
9	Kaiser Meyer Olkin (KMO) test	A measure of sampling adequacy. Mean of variable-specific MSA values	Below 0.50: Unacceptable 0.50–0.59: Miserable 0.60–0.69: Mediocre 0.70–0.79: Middling 0.80–0.89: Meritorious 0.90 and higher: Marvellous	
10	Variable-specific MSA values	Represents adequacy of correlation (diagonal of anti-image correlation matrix)		
11	Bartlett's test of sphericity	Used to test H <sub>0</sub> : The correlation matrix is diagonal	A significant test statistic value and a small p-value ideal p-value ≤ 0.05	(Hair Jr et al., 2014; Mooi & Sarstedt, 2011)
12	PCA –Method of factor analysis	To summarize information (variance) by the variables using a small number of factors	Pre-requisite: r > 0.3 OR 'r' be significant at p-value ≤ 0.05	
13	Determining the number of factors to be retained	Extract factors based on Eigenvalue and % of total variance explained	Eigenvalue > 1 (default) Factors that jointly account for at least 50% of the total variance	
14	Factor rotation	Used to facilitate factor interpretation.	Orthogonal rotation: Varimax	

		Decide on the type of rotation to be used	Oblique rotation: Direct Oblimin
15	Assigning variables to factors	The rotated solution is used to assign each variable to a particular factor. A variable can also be assigned to a different factor to facilitate interpretation.	A variable is assigned to a factor based on its highest absolute loading. The loading should lie at a passable level (i.e., $\geq 0.5$ ), if a variable need to be assigned to a different factor.
16	Average Variance Extracted (AVE)	To check the construct validity	Value to be greater than 0.5 in each case (Hair Jr et al., 2014)
17	Goodness of fit	Check the congruence of initial and reproduced correlations	The proportion of residuals $> 0.05$ to be $\leq 50\%$
18		Check how much of each variable's variance is reproduced through factor extraction (communality)	Communalities to be $> 0.30$
<b>Regression analysis</b>			
19	Data requirements	Do the DV & IVs show variation? Scale of DV	Std. deviation has to be positive DV scale to be interval or ratio
20		Check for linearity between dependent & independent variables: ANOVA	Non-significant at ( $p > 0.05$ ). i.e., the relationship is linear
21		Homoskedasticity: Scatter plot residual of the regression model (y-axis) & dependent variable (x-axis)	There is heteroskedasticity if errors in/decrease as the dependent variable increases.
22	Assumptions	Check residual statistics	Is the expected mean error of the regression model 0? If calculated value $<$ lower critical value, -ve autocorrelation.
23		Autocorrelation: Durbin–Watson test. To check if residuals are independent	Calculated value $>$ upper critical value, +ve autocorrelation. Calculated value $<>$ lower & upper critical value, no autocorrelation
24		If errors are normally distributed or not	Create a histogram of the errors Calculate Kolmogorov-Smirnov test (for $n \geq 50$ )
25	Overall model fit	Check: R2 Adjusted R2 Significance of F-value	R2 $> 0.3$ for cross-sectional research F-value to be significant at $p \leq 0.05$ (Hair Jr et al., 2014; Mooi & Sarstedt, 2011)
26	Effects of independent variables	Check: Standardized b The sign of the b Significance of t-value	+ve b: +ve effect on DV -ve b: -ve effect on DV $p \leq 0.05$