

# Applied Regression Modelling to Recommend Sustainable Tourism Development Policies: A Case Study of Danang City in Vietnam

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## Abstract

Sustainable tourism development is one of the top focuses not only in Vietnam but also around the world. Especially when Covid-19 began to break out in early 2020, causing most tourism activities to stop and causing many communities that considered tourism to be completely independent from other industries to have time to look back. Thus, the article aims to identify the main factors contributing to sustainable tourism development in Danang City, Vietnam. Accordingly, some contents need to clarify factors affecting sustainable tourism development, measuring the characteristics and the role of each factor impacting sustainable tourism development. Finally, policy implications for sustainable tourism development in the future are proposed. Based on the goal, the author surveyed 600 tourists and used the regression modeling method from data processed using SPSS 20.0. In addition, the results showed six factors affecting sustainable tourism development with a significance of 0.01. This situation requires more practical recommendations from state management agencies and tourism enterprises. The contributions of this study suggest sustainable tourism development policies to balance economic development, social stability, and environmental protection. The article evaluates sustainability, considering the cohesion and balance of sustainable development aspects, such as economic, social, and environmental, thereby going deeper and identifying groups of activities. The main drivers to achieve sustainable tourism development include economics, society, environment, tourism resources, tourism products and services, and infrastructure. The research novelty discusses proposed six recommendations, which include (1) infrastructure development, (2) developing technical facilities for the tourism industry, (3) developing human resource training, (4) level of organization and management of the tourism industry, (5) quality of tourism services, and (6) community participation for sustainable tourism development in Danang City, Vietnam.

**Keywords:** Regression Modeling, Sustainable, Tourism, Development and Policy.

## 1. Introduction

Currently, tourism is being chosen by many countries to invest in and develop as a critical economic sector because of its ability to contribute significantly to the GDP structure, bringing valuable income from the exploitation of resource value and creating many jobs for society [1], [2], [3]. Sustainable tourism development is a topic of interest in recent research in both theoretical and practical aspects. Theoretically, the sustainable tourism development approach is associated with the concept of sustainable development, which is introduced based on three main pillars: economic, social, and environmental. In practical terms, the tourism industry is always referred to as a smokeless industry while this field still contains both positive and negative impacts on the local economy and community as well as the environment natural and social environment [4], [5], [6].

There have been studies applying theories on sustainable tourism development. These studies emphasize that if the tourism development strategy is not planned reasonably and correctly, it destroys resources, such as economic, social, and environmental, which are the foundation for tourism development existence and development of local communities since then appropriate new forms of tourism development have been proposed to develop, this form taking into account the elements and principles of sustainable development [6], [7]. Research on sustainable tourism conducted by authors tends to revolve around three pillars of sustainable development: economic development, social stability, and environmental protection. In fact, ensuring balance among the above three pillars are the goal and result of sustainable

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development [9]. How to achieve that goal is still a question that has not been answered unanimously; research has not clarified the necessary groups of activities and the parties' roles in achieving the above goal.

For many years, domestic and foreign studies have shown that sustainable tourism development can only be achieved when close coordination between stakeholders with related interests exists. However, there are always obstacles in this relationship because of differences in approach and perception, and even conflicts of interest between them [10], [11], [12]. In the field of tourism, barriers to cooperation or disputes between parties are often attributed to the following reasons: (i) Decisions about tourism in strategic planning and development are often derived from imposed from the top on the bottom, thus sometimes not reflecting the true interests and wishes of the local community; (ii) Decisions are often formed and represent the interests of certain groups, so they often do not reflect the common interests of the majority of stakeholders; (iii) Some stakeholders with limited capacity or awareness are often not consulted or even left out during the decision-making [12].

In Vietnam, tourism has long been a concern of the Government, creating favorable conditions for development, and is considered an essential industry compared to other economic sectors of the country. From the critical reality of the tourism industry, many localities across the country pay great attention to tourism development with the desire to generate significant revenues from this field [5], [18]. However, strongly developing tourism in localities can lead to many consequences. Therefore, studying the relationship between factors and sustainable tourism development is necessary. From there, propose some solutions to promote sustainable tourism development for localities.

Danang is an essential nucleus of the central key economic region. Danang city is currently a class 1 urban area, a central city at the regional and national level. Geographically, Danang is located in the middle of Vietnam and has a crucial position in terms of both economy - society and defense - security as an industrial, financial, tourism and service center, culture, education, health, science, technology, startups, innovation of the Central region, Central Highlands and the whole country. The center organizes regional and international events. Danang is also a coastal city and an essential transportation hub for road, rail, sea, and air travel. However, many international tourists complain about stores and businesses selling poor quality products and goods at high prices. They sell fake goods, imitation goods, and counterfeit brands, but the authorities seem unaware.

Meanwhile, tourists and consumers are confused because they do not know whether counterfeit or natural products are mixed. Besides, aviation, airport infrastructure, and human resources have not yet created an impressive image. A series of accommodation establishments, restaurants, and shopping spots have not really recovered, affecting the quality of customer service. Travel companies are slow to heal due to a lack of capital and personnel. From the above viewpoints, the author believes sustainable tourism development is a balance and harmony between economic and social development and community benefits, but it must ensure the environment and tourism resources.

## 2. Literature Review

### 2.1. Literature empirical review

The notion of sustainable development has emerged globally in the past several decades. This notion emerged as a response to the growing tension between economic development and environmental preservation in several nations worldwide. It arose from the realization that people were prioritizing rapid economic growth without adequately considering the need for environmental protection and conservation [13], [14], [15]. Protecting cultural values harmonizes the interests of components in the economic system. This has caused natural resources to be overused, leading to the risk of depletion and increased environmental pollution, threatening the sustainable development of humanity. Sustainable development is long-term development consistent with the needs of today's generation without causing adverse impacts [16], [17]. There is a possibility of harming future generations by satisfying their own needs and choosing their standard of living. Sustainable development improves the quality of human life while existing within the framework of ensuring ecological systems. Sustainability is a characteristic of a process or a state that can be maintained forever [19], [20].

Sustainable development is formed by the integration, intertwining, and compromise of three major interacting systems of the world: Natural, economic, and social [21]. Sustainable development is the development that meets the needs of the present without harming the ability to meet the needs of future generations based on the close and harmonious

combination of economic growth, ensuring social progress and environmental protection [22], [23]. This general concept highlights the most important requirements and goals of sustainable development that are suitable for Vietnam's conditions and situation. Sustainable development includes three essential components: Sustainable environment, sustainable society, and sustainable economy [24], [25], [26].

**Sustainable tourism development:** Sustainable tourism development is inseparable from sustainable development. Tourism is a complex economic sector that relies heavily on resources and the environment. The growth of tourism and the overall sustainable development of society have a reciprocal relationship with each other [27], [28]. Sustainable tourism and development are interconnected with several aspects, such as the environment, nature, economy, culture, politics, and society. Sustainable tourism development is an unavoidable and inevitable trend in the field of tourism. Sustainable tourism is traveling and visiting natural areas in an environmentally responsible way to enjoy and appreciate nature and its associated cultural features (which may be both past and present) in a conservation-recommended, low-impact way from tourists and benefit local communities' active socio-economic participation [29].

## 2.2. Research hypothesis

**X1: Infrastructure development:** Infrastructure encompasses several components such as road systems, railway stations, airports, ports, trains, telecommunications information systems, water supply and drainage systems, and energy networks. The utilization of development infrastructure will be employed to enhance socio-economic activities, particularly in the tourist industry [3], [6]. In the tourism sector, it is essential to guarantee that tourists can easily reach tourist locations and have their communication and other requirements met throughout their vacation [5], [6], [30]. Within the realm of infrastructure, the transportation system plays a paramount role in the advancement of tourism. This is due to its direct correlation with guaranteeing the safety and comfort of tourists, offering transportation services at progressively lower expenses, enhancing transportation speed, reducing travel time, prolonging the duration of stays at tourist destinations, and enabling access to even remote locations. Favorable infrastructural conditions are crucial for the successful building and execution of sustainable tourist development. If the circumstances of the infrastructure are restricted, it is necessary to carry out infrastructure development in order to fully satisfy the requirements of tourist development [7], [9], [10], [16]. Thus, the author proposed hypothesis 1:

**H1: Infrastructure development affecting sustainable tourism development.**

**X2: Developing technical facilities for the tourism industry:** Tourism technical facilities refer to the physical and technical elements utilized to utilize tourism resources for the purpose of creating and providing services and commodities that meet the requirements of visitors during their trip [11], [12]. According to this understanding, they include both the technical facilities of the tourism industry and the technical facilities of other sectors of the national economy participating in exploiting tourism potentials such as road systems, bridges, post and telecommunications, electricity, and water [15], [16]. This also confirms the close connection between tourism and other industries in the interdisciplinary relationship. The creation of a system of technical tourism facilities is an important factor affecting the level of satisfaction with tourists' needs because of its capacity and utility [18]. Creating tourism products and services that meet the demands of tourists involves three key components. These are tourism resources, technical and physical facilities, and labor [19], [23]. Therefore, technical facilities are a crucial and irreplaceable aspect. Individuals utilize their work efforts and employ technological resources to harness the inherent worth of tourism assets in order to generate services and products that are offered to visitors. Aside from resource concerns, the diversity, richness, modernity, and attractiveness of physical and technological facilities also contribute to the diversity, richness, and attractiveness of tourism services [24]. In order to foster successful tourism, a nation or enterprise must possess a robust infrastructure of physical and technological amenities. Hence, the extent of advancement in the physical and technological infrastructure of tourism serves as both a prerequisite and an indication of the amount of tourist development in a certain region or nation. Thus, the author proposed hypothesis 2:

**H2: Developing technical facilities for the tourism industry affecting sustainable tourism development.**

**X3: Developing human resource training:** Tourism is a vital sector for several countries throughout the globe. The sector's low degree of automation necessitates a substantial labor force with a wide range of skills. Furthermore, the consumers served have highly varied demands. Individuals have a crucial role in determining the overall effectiveness of any unit or organization [19], [23]. Specifically, in the service and tourist sectors, the significance of worker quality

is particularly crucial. Within the Tourism business, most employees engage in direct interactions with clients and actively contribute to the accomplishment of the organization's objectives. The level of customer service is contingent upon both the credentials and abilities of the staff as well as their work ethic [20], [21]. Therefore, in order to thrive and progress in an increasingly intense competitive environment, tourism enterprises must prioritize the significance of their personnel and ensure that their team has extensive expertise. The individual possesses a wide range of abilities and expertise and exhibits commendable professional principles. Empirical evidence demonstrates that the tourist workforce has grown in recent years due to industry expansion, although it fails to guarantee sustainable growth of tourism [22], [23]. Several divisions still suffer from a deficiency in both the number and caliber of employees, particularly in terms of their proficiency in foreign languages, which is quite inadequate. Furthermore, the cognitive abilities and competencies of workers in the tourist industry remain constrained, resulting in a deficiency of professionalism. Human resource development is crucial for achieving sustainable growth in the tourist industry. Thus, the author proposed hypothesis 3:

**H3:** Developing human resource training affecting sustainable tourism development.

**X4:** Level of organization and management of the tourism industry: The state management agencies will be responsible for strategizing the growth of the tourist sector, ensuring that investments are made in accordance with the planned timeline. This will ensure efficient use of investments, adequate allocation of resources at each stage, and selection of appropriate directions for investment projects [24], [25]. It is important to focus on preserving and taking care of cultural artifacts. Additionally, it is necessary to establish rules, systems, and policies that promote the involvement of organizations, individuals, and enterprises in the growth of tourist activities. A priority strategy should be established for tourist investment projects that offer viable solutions to mitigate the environmental consequences of tourism [26]. Developing efficient and contemporary urban infrastructure, transportation, information, and financial services is crucial for attracting investment in the tourism sector. Socializing in the development of tourist goods aims to align quality and pricing with market demands, hence enhancing competitive advantage in the tourism industry by offering distinctive products. Concentrate on the dissemination of knowledge and the promotion of propaganda [27], [28]. State management agencies are responsible for effectively allocating and coordinating all available resources to guide the growth of tourism and accomplish long-term sustainability objectives. Hence, the degree of organization and administration within the tourist sector plays a crucial role in influencing the progress of tourism, as it may either impede or facilitate its development based on certain policy measures. Tourism development is an integral part of socio-economic development, since it aligns with the overall progress of society. Thus, author proposed hypothesis 4:

**H4:** Level of organization and management of the tourism industry affecting sustainable tourism development.

**X5:** Quality of tourism services: Service quality in the tourism business is measured by customer expectations and perceptions. Empirical evidence demonstrates that the caliber of tourist services plays a pivotal role in fostering sustainable tourism development [3], [29]. Furthermore, it is a vital determinant in establishing a reputable and distinctive identity for both service-oriented tourism firms and the overall tourism industry of nations and regions [6], [30]. Implementing standardized practices in the tourism industry and enhancing service quality benefits both companies, by ensuring high-quality services, and travelers, who can confidently explore premium locations, service providers, and merchandise [30], [31], [34]. Furthermore, it plays a role in extending the duration of sightseeing trips, stimulating expenditure, and boosting the inflow of foreign currency generated by tourism. Furthermore, enhancing the quality of service will enhance the reputation of both local and national tourism, leading to a direct increase in visitor satisfaction and the competitiveness of tourism service enterprises. This, in turn, will contribute to the sustainable development of the tourism industry. Thus, the author proposed hypothesis 5:

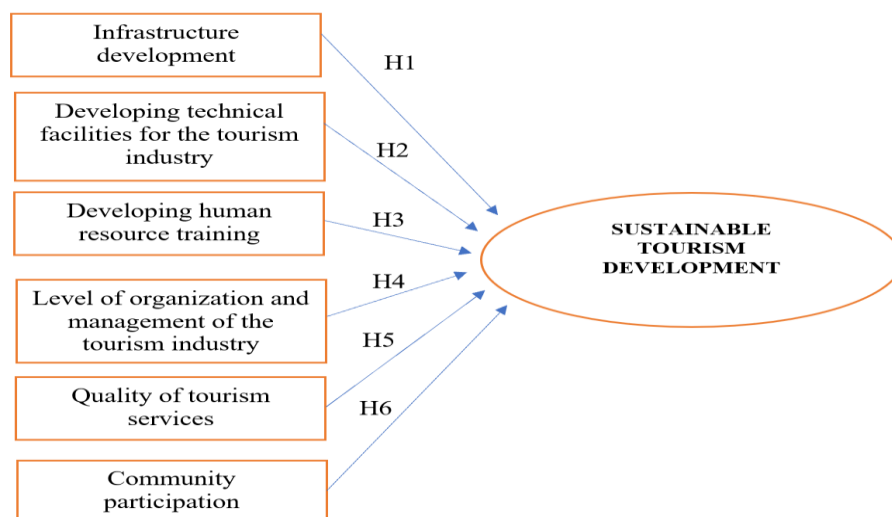
**H5:** Quality of tourism services affecting sustainable tourism development.

**X6:** Community participation: Community participation including (1) Local residents, (2) Tourism businesses, and (3) Tourists. Local residents: Tourism not only has an economic impact but also impacts the lives, traditions, culture, and the community's livelihoods [32], [33]. Unlike other participants in the tourism industry, local communities must deal with tourism whether they are selected to participate; community members are essential in direct and indirect impacts on tourism development. During the planning process of tourism development, it is necessary to create participation from the local community [5], [34]. Local communities play a crucial role in preserving biodiversity and ensuring

sustainability by using resources for tourism activities. Disturbances and conflicts between local people and tourists quickly appear if they stand aside, reducing safety for tourists [13], [35], [36]. Establishing and maintaining community relationships is vital throughout the execution of tourist initiatives in order to precisely ascertain the objectives and advantages of such operations. Facilitating the dissemination of information to the local community, enabling their active involvement in tourism activities, with the aim of fostering long-term sustainability in tourism services, environmental preservation, conservation efforts, and overall tourist satisfaction. Thus, author proposed hypothesis 6:

**H6:** Community participation affecting sustainable tourism development.

The growth of the tourist business is intricately linked to the overall socio-economic development of each region and the entire country, as well as the specific tasks, exploitation processes, and environmental resources involved. In some regions, pollution phenomena and processes are becoming more pronounced, leading to a rapid worsening of economic, social, and human environmental circumstances. Additionally, there is an alarming drop in many types of resources, natural environmental variables, and ecology. Consequently, the matter of sustainable tourist development is gaining more significance. An essential task is to identify the factors that impact sustainable tourism development. This is crucial for countries and localities that already have or are in the process of developing tourism activities. By accurately assessing the current situation, they can make necessary adjustments to the factors that directly influence sustainable tourism development, thereby improving its effectiveness.



**Figure 1.** Six factors affecting sustainable tourism development

**Source:** The author proposed the model

Figure 1 shows six factors affecting sustainable tourism development in Danang City, Vietnam. Six factors include X1: Infrastructure development, X2: Developing technical facilities for the tourism industry, X3: Developing human resource training, X4: Level of organization and management of the tourism industry, X5: Quality of tourism services, and X6: Community participation. Y: Sustainable tourism development.

### 3. Method

This section presents the research design and methods in the article. The case study method, in-depth interview method, and desk research method are three methods that the author applies in the process of collecting and analyzing data. The study employs fundamental research methodologies often utilized in social science research, specifically focusing on qualitative analysis in economics. In conjunction with qualitative analysis, the author used descriptive statistical approaches, statistical analytic methods, comparative analysis, and synthesis to examine the quantity. Furthermore, the study conducted sociological surveys and in-depth interviews to assess and analyze the present state of sustainable tourism development in Danang City, Vietnam [8].

In previous tourism studies, the research method applied was often quantitative because the studies were frequently inclined to determine the economic significance of tourism impacts. However, today, tourism research frequently

focuses on tourist behavior, the role of relevant parties in tourism activities, and the impact of tourism development on the economy, society, and environment. These behaviors and effects are not always clearly expressed, easy to grasp, and often indirect, so measurement should be done using qualitative methods combined with quantitative methods. Therefore, the author applied quantitative methods by interviewing 15 experts in the tourism sector and 15 managers at 15 tourism enterprises in Danang City and conducted a questionnaire survey with tourists related to tourism activities from 30 tourism organizations. 30 Tourists were surveyed and had deep expertise in the tourism sector and years of experience from November 2023 to January 2024 in Danang City. This method helps the author use probing questions to explore more deeply the perceptions and perspectives of stakeholders the roles and connections between parties, thereby identifying points of convergence in thinking and actions of each party towards sustainable tourism development.

While reviewing documents from research, experience, and observations, the author believes that sustainable tourism development is influenced by many different factors. However, with this study, the author seeks to understand the interaction of subjective factors affecting sustainable tourism development. Therefore, the author continued to use quantitative research methods to investigate tourists through surveys. Hence, the study distributed 600 questionnaires directly to 600 tourists associated with tourism activities from 30 tourism companies (each company surveyed 20 tourists). However, only 565 questionnaires were considered valid and contained comprehensive information [8]. The sociological survey questionnaire was developed by consultation with the aforementioned 15 managers and conducting trial interviews prior to the extensive survey. The statistical techniques used in this study included calculating the mean and standard deviation. A Likert scale: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Strongly Agree, which is employed in the construction of a questionnaire to categorize the responses from strongly disagree to agree strongly [8].

In addition, regression analysis is used to find the dependence relationship of a variable, called the dependent variable, on one or more other variables, called the independent variables, to estimate or predict the expected value of the dependent variable when knowing in advance the value of the independent variable. Some other names for dependent and independent variables are as follows: Dependent variable, explained variable, predicted variable, regressed variable, response variable, endogenous variable. Independent variables: explanatory variables, predictor variables, regression variables, agent or control variables, exogenous variables. Next, multiple linear regression analysis is implemented using the ordinary least squares method [8]. Identifying factors affecting sustainable tourism development is essential to help countries and localities that have and are developing tourism activities accurately assess the current situation, thereby enhancing the role. There are positive adjustments to factors that directly affect sustainable tourism development.

The independent variables include X1: Infrastructure development, X2: Developing technical facilities for the tourism industry, X3: Developing human resource training, X4: Level of organization and management of the tourism industry, X5: Quality of tourism services, and X6: Community participation. The dependent variables: Y: Sustainable tourism development. Finally, a series of detections for violations of hypotheses in multiple linear regression are also conducted to ensure the accuracy of the constructed regression equation is appropriate. Hypothesis violations tested in this section include linear relationship, constant variance of residuals, normal distribution of residuals, independence of residuals, also known as autocorrelation phenomenon, and multicollinearity phenomenon.

#### **4. Result and Discussion**

Danang is the central highlands region's economic, cultural and political center; all North to south and regional arterial roads pass through Danang. The North to south expressway is smooth, with an allowable speed of 120km/h through Danang, which is favorable for economic and social development in general and tourism in particular. Danang Station welcomes at least 10 cross Vietnam trains daily from both ends of Saigon and Hanoi, creating diverse travel methods for tourists. This convenience has brought 25% of the number of tourists to Danang.

In 2023, the total number of tourists served by accommodation establishments in Danang will reach 7.94 million, an increase of 98.4% compared to 2022. The service sector continues to be the foundation of the city's economy after the Covid-19 pandemic. At the press conference announcing socio-economic statistics 2023, the Danang Statistics



Department commented that the world and domestic economies and Danang City faced many difficulties and challenges in the past year. But thanks to the timely issuance of important policies by the Central Government, the Danang city government always stands side by side and accompanies the business community and people to overcome difficulties; Danang has achieved the goal of maintaining economic growth and ensuring social security.

Danang's economic growth trend in 2023 has been unstable over the quarters; some production and export sectors have been negatively impacted by the world market, especially the city's partner countries. Growth over the quarters is uneven and depends mainly on the development of the service sector. Gross regional product (GRDP) only increased by 2.58% compared to 2022 (not reaching the set target), of which the first quarter increased by 7.49%, the second quarter decreased by 0.60%, the third quarter increased by 1.22%, and the fourth quarter is estimated to increase by 2.82%. The overall increase in 2023 is lower than the average increase in 2021-2023 (5.51%/year).

However, in terms of the scale of the city's economy in 2023 at current prices, it still reached 134,247 billion VND, expanding 9,728 billion VND compared to 2022, of which the expansion focuses on the value-added service area with 8,923 billion VND, accounting for 91.72%. Regarding the GRDP scale, Danang maintains the leading position among the 5 localities in the Central Key Economic Region, ranking 3rd out of 14 provinces and cities in the North Central and Central Coast regions. GRDP per capita is estimated to reach 107.8 million VND/person, an increase of 3.4% compared to 2022, much higher than the average from 2019-2022 (average increase of 2.42%/year). The overall labor productivity of the entire economy is estimated to reach 212.1 million VND/person, a rise of 1.6% compared to 2022 after excluding price increase factors, while for the whole of the period 2019-2022, labor productivity of Danang only increased by 1.02%.

From the above statistics, it can be seen that although the economic growth rate of Danang city in 2023 only increased slightly (2.58%), the scale of economic expansion is quite good (an increase of nearly 10 thousand VND), labor productivity and people's income have also improved significantly, consumer demand has maintained a recovery trend and increased gradually each year since the Covid-19 pandemic. In 2023, the service sector will continue to be the foundation of Danang City's economy, with some industries maintaining relatively high growth. Value-added estimates for this area increased by 4.1% compared to the previous year. Among them, some industries with relatively high growth include administrative activities and support services, which increased by 41.79%; accommodation and food services, which increased by 25.83%; and other services, which increased by 30.68%.

Emphasizing areas with high growth rates, the Danang Statistics Department showed that the Trade and tourism sectors are still bright spots in growth in 2023. Total retail sales of goods reached 127 trillion VND, an increase of 16.8% compared to 2022, of which service revenue, accommodation, and food increased by 33.9%, travel revenue, and tourism support services increased by 33.9%, calendar increased by 133.8%, other consumer service revenue increased by 22.9%. The total number of tourists served by the city's accommodation establishments in 2023 will reach 7.94 million, an increase of 98.4%, of which international visitors reached 1.99 million, 4.2 times higher than in 2022. Domestic visitors reached 5.4 million, an increase of 66.1%. In addition, transportation, warehousing, and postal delivery activities in 2023 will reach nearly VND 34,784 billion, an increase of 31.6%. Information and communication industry revenue reached 17,598 billion VND, and the scale of added value of the entire industry at current prices in 2023 is estimated to reach 9,841 billion VND, expanding more than 768 billion VND compared to 2022.

Mainly, Danang's import and export sector in 2023 decreased sharply, and the total import and export turnover of goods is estimated to reach 3,015 million USD, down 16% compared to 2022; this reflects the cumulative impact of foreign demand decline. The global economy faces many risks and uncertainties; trade tensions and inflation have negatively impacted Vietnam's import and export activities, particularly in Danang City. This result shows that it also partly affects tourism activities in Da Nang City. In addition to the results achieved in recent years through secondary data and to demonstrate a deeper analysis of the current state of sustainable tourism development in Da Nang City, the author used survey data tourists to evaluate the current situation, shown in table 1 below.

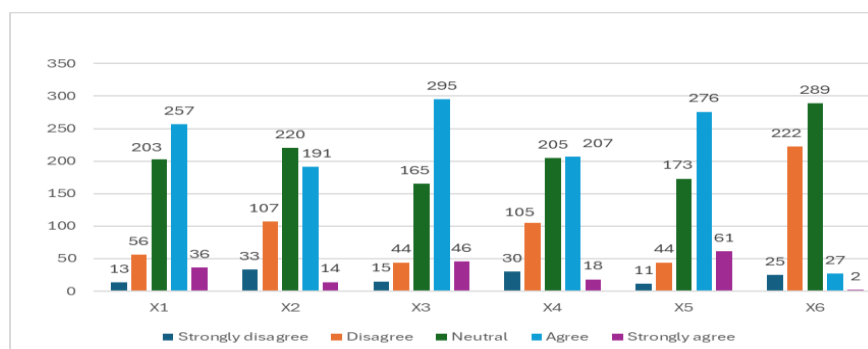
**Table 1.** Mean and Standard Deviation for sustainable tourism development

Factors	N	Min	Max	Mean	Std. Deviation
X1: Infrastructure development	565	1.00	5.00	3.4372	0.84322
X2: Developing technical facilities for the tourism industry	565	1.00	5.00	3.0814	0.92470
X3: Developing human resource training	565	1.00	5.00	3.5540	0.85220
X4: Level of organization and management of the tourism industry	565	1.00	5.00	3.1381	0.93516
X5: Quality of tourism services	565	1.00	5.00	3.5876	0.85564
X6: Community participation	565	1.00	5.00	2.5735	0.67135
Y: Sustainable tourism development	565	1.00	5.00	3.4372	0.84322

**Notes:** n = 600 samples but 565 values, 35 lacks of information

Table 1 shows data is perfect for the process of developing their service sector have a pressing need for sustainable tourist development. In our nation, these requirements are also being advocated in novel economic methodologies. It is imperative that we carefully consider and modify the aspects that impact our decision-making process. Strive to identify prospective benefits or merits. Implement a comprehensive and enduring plan to foster the growth of tourism, taking into account its sustainable characteristics. This responsibility is assigned to all organizations involved in the economy, including departments, businesses, people, and Danang City.

Therefore, developing infrastructure and technical facilities is necessary: Travel is a trip and an experience. Consequently, mentioning the essential advantages and resonances of infrastructure is impossible, including road systems, railway stations, airports, ports, railways, telecommunications information systems, water supply and drainage systems, and electricity networks. When the infrastructure is modern, trips are made more accessible. The built itinerary system ensures tourists have easy access to tourist attractions. Satisfy communication and other needs during the journey. Besides, Danang City needs to improve the quality of tourism services; it is essential to ensure the quality of any profession. Deliver superior items to clients. Tourism is classified as a service business; therefore, it is subject to the same high standards of quality as other sectors. Supplier perceptions do not accurately represent the quality. It originates from the emotions of those who derive pleasure and have firsthand encounters with it. Put simply, the evaluation of quality is done from the perspective of the client. Next, they conduct a comparison to identify the most optimal providers for their specific needs. Furthermore, tourist resources: Tourism resources encompass natural landscapes, components of nature, and cultural values that constitute the foundation for creating tourism goods, tourist destinations, and attractions to cater to the demands of tourists. Tourism resources encompass both natural and cultural attractions, and tourist resources are vital for the development of tourist goods. Regarded as a crucial prerequisite or determining element for organized tourist activity. Figure 2 shows that sustainable development in tourism is achieved via the utilization of exploited resources and the implementation of good management strategies. The materials also offer preliminary visualizations to assist in identifying development directions and objectives. Choose common tourism offerings and propose strategies for tourism growth. The confluence of other aspects guarantees the practicality and long-term viability. Subsequently, it results in commensurate economic and social effectiveness. The detailed results of the tourist survey (Figure 2) are scientific evidence to help managers refer to and apply in practice.



**Figure 2.** Frequency of factors for sustainable tourism development



Figure 2 illustrates that the research findings exhibited over 60% for levels 3 to 5. This provides the scientific foundation for leaders to make informed judgments and suggestions about sustainable tourism development. In addition, the state management agency is responsible for planning the tourist business. Offers guidance in achieving strategic objectives. Subsequently, Danang may make investments in accordance with the predetermined plan, distribute resources in a suitable manner for each phase, and select the optimal development path for investment initiatives. In addition, Danang City needs to provide the appropriate guidance for development and outline the necessary tasks to be completed. Hence, it is important to ascertain the potential or benefits of various phases of application. Establish a robust framework to incentivize investment in the growth of tourism. Concentrate on disseminating information and conducting propaganda efforts by supplying relevant topics with information. Besides these achievements, Danang tourism also faces many difficulties. Some criteria for key economic sectors have not been achieved or achieved but are not sustainable, such as the strategy to develop the tourist market, which has not yet been completed. clear, lacking in science, and insensitive to economic and political fluctuations, so when developments occur, they are not proactive and do not fully anticipate the impact on the customer market. The business strategies of tourism companies are not sustainable and long-term in the international tourist market and are still passively dependent on a few large tourist markets. Stimulating domestic tourism is not practical, and competitiveness is still low... The cause of the above situation is in addition to some subjective reasons, such as the primary policy system, management role, and team capacity. The team has not met the requirements... also due to ineffective inter-sectoral coordination; The roles and responsibilities of all levels and sectors from central to local levels have not been fully promoted; awareness of tourism development has not met development requirements. Tourism investment is still limited and has not brought the desired results; Some policies related to tourism are still inadequate and have not promptly resolved difficulties for tourism businesses to improve competitiveness and attract tourists; Security and safety issues for tourists are not yet guaranteed. The author used the least squares estimation method to further evaluate the factors affecting sustainable tourism development in Da Nang City, and multivariate linear regression results are shown in table 2 below.

**Table 2.** Testing six factors affecting sustainable tourism development

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.386	0.122		3.174	0.002		
X1	0.104	0.028	0.141	3.749	0.000	0.496	2.017
X2	0.091	0.018	0.134	4.965	0.000	0.953	1.050
X3	0.075	0.020	0.102	3.811	0.000	0.977	1.024
X4	0.078	0.021	0.117	3.686	0.000	0.695	1.438
X5	0.094	0.025	0.129	3.707	0.000	0.575	1.739
X6	0.538	0.026	0.577	20.717	0.000	0.898	1.114

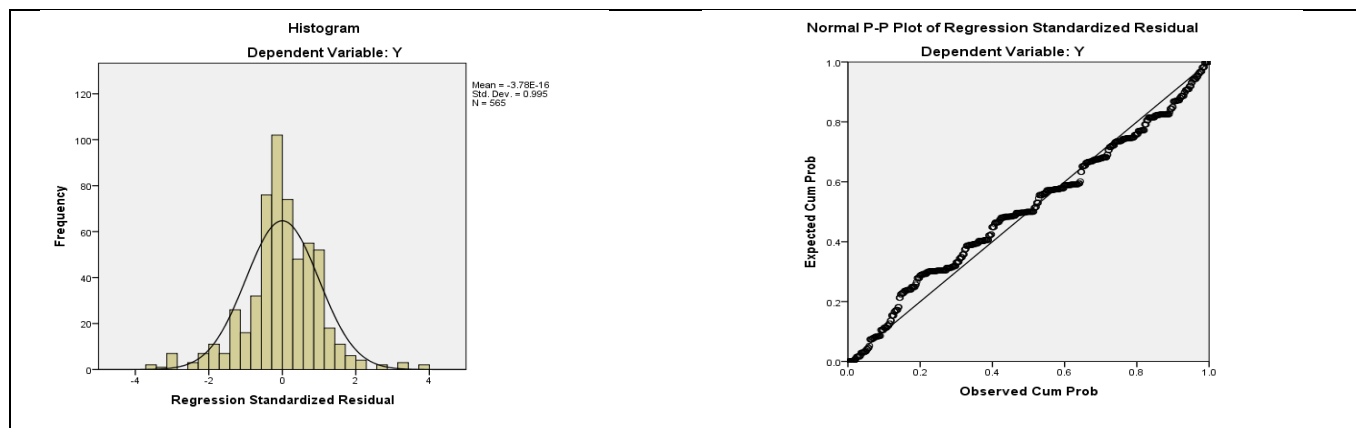
a. Dependent Variable: Y: Sustainable tourism development

**Note:** Significance 0.01

**Source:** Data using SPSS 20.0 and Excel

Table 2 shows six factors affecting sustainable tourism development with Sig. 0.01, and there are six hypotheses accepted. The research model shows that sustainable tourism development of a destination is affected by the following factors: Community participation in tourism, strengthening community empathy and tourists, raising awareness of environmental protection, increased recognition of a destination, and increased funding sources for environmentally responsible projects. While reviewing documents from research, experience, and observations, the author believes that sustainable tourism development is influenced by many different factors. However, with this study, the author sought to understand the interaction of factors affecting sustainable tourism development. The subjects considered in the study include: (1) Infrastructure development, (2) Developing technical facilities for the tourism industry, (3) Developing human resource training, (4) Level of organization and management of the tourism industry, (5) Quality of tourism

services, and (6) Community participation. After analyzing the linear regression results with a significance level of 5%, the author continues to test for violations of the model's hypotheses, such as heteroscedasticity, autocorrelation, and multicollinearity; the route is shown in figure 3 below.



**Figure 3.** Testing for standardized residual for sustainable tourism development in Vietnam

**Source:** The data processed by SPSS 20.0

The findings of model testing, as indicated in Figure 3 and Table 2, demonstrate the practical significance of the research model. Furthermore, the model is compatible with theory and does not contradict any of the assumptions inside the model. This serves as a key scientific foundation for policymakers to consult when formulating suggestions to support the growth of sustainable tourism. In addition, sustainable tourism development is a harmonious combination of tourism, economic, and social development with the expected benefits of the community, but it must maintain the culture, ecology, and environment of the locality in which it develops. The research model has shown that to achieve that mission, subjects related to sustainable tourism development must join hands to carry out everyday development tasks to build the economy and protect the current and future environment. Bootstrap testing is the final step of the regression analysis process; this is a reliable result that increases policy implications for sustainable tourism development, as specified in table 3 below.

**Table 3.** Testing Bootstrap for six factors affecting sustainable tourism development

Model	B	Bootstrap				
		Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper
(Constant)	0.386	0.001	0.118	0.001	0.161	0.615
X1	0.104	0.003	0.031	0.001	0.040	0.160
X2	0.091	0.007	0.018	0.001	0.056	0.127
X3	0.075	0.000	0.019	0.001	0.037	0.112
X4	0.078	0.002	0.021	0.002	0.039	0.120
X5	0.094	0.001	0.024	0.001	0.048	0.143
X6	0.538	0.004	0.045	0.001	0.450	0.630

**Note:** 15000 bootstrap samples; Significance 0.01

**Source:** The data processed by SPSS 20.0

Table 3 testing Bootstrap for coefficients for critical factors affecting sustainable tourism development with Sig. 0.01, all the hypotheses accepted. Besides, local authorities should consider long-term benefits as a guideline for development; tourism development must be based on a sustainable, systematic foundation with specific planning and a future vision, not on the development of a breakthrough that leaves lasting consequences for future generations. Businesses in tourism and travel conduct business in a civilized manner, taking the community and tourists as their base and knowing how to preserve tourism resources. The local community should actively participate in community tourism activities, exploit the community's cultural features, and protect the environment and its long-term benefits.

Finally, tourists participating in tourism must be responsible for the community, preserving cultural ecology and protecting the environment at the destination. Therefore, there is a requirement for solutions that promote sustainable tourist growth while still pursuing profitability and social objectives. These solutions should address consumer expectations and actively contribute to the priority policy implications.

## 5. Conclusion and Recommendation

### 5.1. Conclusion

This study explored the role of stakeholders in the sustainable tourism development process in Danang City, Vietnam. The context of Danang tourism has provided a clear picture and an excellent opportunity to make discoveries, which helps the research analyze early and come to more explicit conclusions. From there, the article proposes solutions and recommendations for relevant parties and each activity group to help implement community tourism models effectively and sustainably. In sustainable development, economic and social environmental balance is the goal. To achieve this goal, stakeholders, tourism, and the community must understand and perform their roles well. The article has contributed to clearly identifying the practical activities of Danang City stakeholders, policymakers, tourism, and community members. In addition, the research was conducted based on the theoretical foundations of sustainable tourism development. The research method used is a combination of qualitative and quantitative. The research sample is large enough to perform quantitative methods with the linear regression model. The author used six factors that impact the goal of sustainable tourism development, including (1) Infrastructure development, (2) Developing technical facilities for the tourism industry, (3) Developing human resource training, (4) Level of organization and management of the tourism industry, (5) Quality of tourism services, and (6) Community participation. Based on the research results, the author develops some implications to suggest to those involved in sustainable tourism development that they should consider applying to tourism development at the destination.

### 5.2. Recommendation

Based on the orientation of building and developing sustainable tourism, which is the development of tourism activities that fully consider current and future economic, social, and environmental impacts while meeting the needs of tourists and developing the industry of tourism while meeting the requirements of protecting the ecological environment and the requirements of the local community. Sustainable tourism development involves the environmental, economic, and socio-cultural aspects of tourism development, requiring the establishment of an appropriate balance between these six aspects to ensure long-term sustainability:

(1) The author accepted H1: Infrastructure development affecting sustainable tourism development at the 1% significance level [24], [28]. Therefore, enhancing tourists' access to destinations and creating a link in the tourism resource chain are two of Danang's primary goals in investing in the development of infrastructure systems for transportation, water, electricity, environment, post, and telecommunications, as well as for industries and fields directly related to tourism development, including banking, finance, credit, and healthcare. Large infrastructure projects and important national tourist projects, in particular, require investment marketing efforts. Funding initiatives for tourist development should prioritize the preservation, enhancement, and development of existing tourist resources. Develop investment incentive regulations in specific tourist areas and destinations; create more favorable conditions regarding administrative procedures, business establishment licensing, and business and investment licensing; Accelerate site clearance progress. Ultimately, the key is to prioritize the optimal requirements of clients in the process of advancing and modernizing the development of goods or services. During that period, the capabilities had a direct or indirect impact on the characteristics and functionalities of the structures. It fulfills not only the demands of tourism but also addresses other requirements for economic and social growth. The implementation enhances the utilization of tourist resources by integrating human and technological infrastructure. Enhance the range, abundance, and appeal of tourism services. Thus, it can be asserted that fostering the advancement of these fundamental systems also presents opportunities for the growth of tourism.

(2) The author accepted H2: Developing technical facilities for the tourism industry affecting sustainable tourism development at the 1% significance level [10], [25], [26]. Therefore, Danang City must improve its infrastructure to access the destination, which still lacks uniformity. The system of technical facilities, accommodation facilities, and

tourism services is developing rapidly. Still, in general, tourism products' scale, amenities, and style are small and are not operated professionally due to a system of national tourist areas with outstanding brands that have not yet been formed. In addition, the tourist industry suffers from a significant deficiency in human resources. Despite numerous recent efforts to develop tourism human resources, they have not adequately met the requirements of the modern, integrated, and globalized service industry in terms of professionalism, skills, integration, and global connections. Besides, Danang City strictly controls and deploys many activities for tourism businesses to improve knowledge about sustainable development, how to have differentiated products, responsible tourism with local communities, environmental protection, and application of criteria of sustainable tourism development, ensuring the goals of sustainable tourism development include: Economic efficiency; regional development; meet tourist satisfaction. Preserving cultural values, protecting nature, environmental protection, effective use of resources, social security, and social balance. Regularly monitor and check resource use to avoid overuse, which causes the risk of exhaustion, decline, or severe degradation. Timely coordination between specialized tourism management agencies, relevant agencies, and functional sectors is needed to overcome tourism resource incidents, deterioration, and degradation.

(3) The author accepted H3: Developing human resource training affecting sustainable tourism development at the 1% significance level [17], [28], [29]. Therefore, Danang City should collaborate with coordinating entities and enterprises directly involved in the tourist sector. Optimize the allocation of resources to guide the growth of tourism in order to attain sustainable objectives. Securing a position in the creation and implementation of strategic management. Tourism development is an integral component of overall socio-economic progress due to the necessity of allocating financial resources and discovering new economic opportunities. Value is generated by tourism, as it is a type of economic service industry. Personnel must carry out the occupation: Human resources in organizations that oversee or directly provide tourism services. The service industry is mostly governed by human decision-making in terms of strategy and planning. Human resources must guarantee the adequacy of capability, credentials, and experience. In addition to attitude and soft skills, these characteristics are crucial in influencing visitors' emotions. In order to promote industrial growth, it is important to attract skilled personnel, which can lead to increased efficiency. It is crucial to emphasize professionalism in managing emerging problems and the ability to think quickly or handle foreign languages proficiently.

(4) The author accepted H4: Level of organization and management of the tourism industry affecting sustainable tourism development at the 1% significance level [18], [31], [35], [36]. Therefore, Danang City needs to improve the quality of human resource recruitment for the management and labor apparatus of the tourism industry on the basis of strictly implementing regulations on human resource quality standards corresponding to each job position and recruitment process. Supplement and improve mechanisms and policies in recruiting, training, and fostering a team of experts, officials and workers in the tourism industry, especially policies on socialization of training and fostering nurturing tourism human resources. Attract good experts and highly skilled workers from outside to priority areas or fields and jobs where the on-site force is still thin and weak. Create conditions for social organizations and businesses of all economic sectors to coordinate and link with training establishments to expand short-term, non-focused training forms to serve the needs of both learning and studying, just do. Support community education and open training classes on tourism knowledge for people to directly participate in tourism activities. Strengthen the training capacity of tourism human resource training establishments in terms of teaching staff, facilities and teaching conditions, expand cooperation and training links with schools and establishments, a prestigious domestic and international training organization. Regularly organize training and retraining activities for human resources in the tourism industry to meet the development requirements of the industry, focusing on training and developing a team of experts in each specialized field of tourism activities tourism, especially sustainable tourism development; improve the quality of officials and civil servants in state management of tourism at all levels; close combination of theoretical and practical training. In particular, educational content on natural resources and environmental protection should be emphasized in the program system of all levels of tourism training.

(5) The author accepted H5: Quality of tourism services affecting sustainable tourism development at the 1% significance level [31], [32], [34]. Therefore, tourist companies must enhance the quality of their tourist services, as evidenced by the minimal standards set by the travel services sector. This will ensure pleasant experiences and evaluations from customers who like the services, in addition to the other advantages offered by businesses. Establish

a competitive edge over other enterprises in the market. Acquire a reliable and sustainable stream of potential consumers for your business. Essentially, quality is assessed based on the expectations and impressions of customers. The reputation of the service business unit is established by the quality that embodies the brand's values. In addition, it is important to provide overall observations on the tourist business and assess the specific location where the trip is conducted. This entails offering broad observations and evaluations while interacting with individuals from different locations. Enhancing the quality of service will bolster the reputation of both local and national tourism, leading to a direct enhancement in tourist satisfaction. Promote competition among tourist service providers to facilitate sustainable development of the tourism industry. Induces increased expenditure requirements, particularly in relation to activities related to foreign tourism.

(6) The author accepted H6: Community participation affecting sustainable tourism development at the 1% significance level [31], [32], [33], [34]. Therefore, Danang City should continue creating community tourism in a manner that is environmentally and socially responsible. It is imperative that the development of community tourism, aimed at eliminating hunger and reducing poverty, is done in a sustainable manner. Sustainable development refers to maintaining and improving landscape quality, both in rural and urban areas, to avoid environmental degradation. Sustainable tourism aims to promote green, clean, friendly, and safe tourism. Supports the conservation of flora and fauna. Environmental protection must be respected by management agencies at all levels and must become a mandatory requirement in planning tourism development projects and strategies for the province, tourist areas, and destinations. Indeed, this matter is growing and pressing and frequently brought up when highlighting the prudent utilization of tourism resources. In community tourism, it is essential to utilize natural and human resources in a responsible manner. The community tourism development process must be guided and administered in accordance with a guiding principle: This approach seeks to seamlessly integrate the present and future requirements of the organization, tourism production, and participation in the tourism consumption calendar. Its primary objective is to preserve, regenerate, and develop natural resources while also safeguarding and promoting national cultural identity and the sacred essence of tradition.

Limitations of the study and future research: The research has achieved its goals, but a more comprehensive survey of Vietnam's provinces and cities is needed. For tourism to develop sustainably, the following study considers the 6 factors above and calls on relevant parties to play their roles well and cooperate. Moreover, the subsequent research needs a solid institution to promote and regulate that cooperation practically and effectively. Finally, further research needs to analyze in more depth contents such as (1) Improvement of tourism infrastructure, (2) Protecting tourism resources and environment, (3) Creating resources stable and sustainable tourists, (4) Diversifying typical tourism products, (5) Strengthening and enhancing community responsibility and participation in tourism development process, (6) Human resource development, (7) Strengthening work promoting tourism, regional cooperation, searching and expanding markets, (8) Developing policy mechanisms for protecting local environmental resources (9) Enhance the restoration of historical and cultural relics and develop traditional festivals system to contribute to the development of Da Nang tourism in a sustainable direction and bring tourism Da Nang has become a destination not only for the whole country but also for the region and the world.

## 6. Declarations

### 6.1. Author Contributions

Conceptualization: N.D.T.; Methodology: N.D.T.; Software: N.D.T.; Validation: N.D.T.; Formal Analysis: N.D.T.; Investigation: N.D.T.; Resources: N.D.T.; Data Curation: N.D.T.; Writing Original Draft Preparation: N.D.T.; Writing Review and Editing: N.D.T.; Visualization: N.D.T.; The author has read and agreed to the published version of the manuscript.

### 6.2. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

### 6.3. Funding

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#### 6.4. Institutional Review Board Statement

Not applicable.

#### 6.5. Informed Consent Statement

Not applicable.

#### 6.6. Declaration of Competing Interest

The author declares that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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