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Contents

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Factors Affecting the Sustainable Ecotourism Development Amongst the Tourism Service Providers in SÃO PAULO, BRAZIL

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Brazilian ecotourism industry is often connected with conservation and sustainability discussions. Though the web-based tourism providers are significant in promoting the tourism network of the country, one of the challenges pertained in the industry focuses on sustainable development practices. The purpose of the study is to highlight the role of certification, conservation goals and sustainable practices amongst the service providers. The study considered 110 web-based ecotourism operators in the state of Sao Paulo, Brazil. The content analysis approach is used in the service provider's website to maintain texts as units. Factor analysis is used to identify the underlying factors that nurture the ecotourism goals and a logistic regression model is applied to ascertain the certification criteria of the ecotourism operator's. The study proves that the sustainability of the ecotourism activities offered by service providers is affected by certification. Preserving the environment is the leading goal of the service providers, followed by socio-cultural impacts, conduct and ethics, economic contributions, and education. The study designed a model for certification criteria that gives more importance to the sustainability of ecotourism rather than profit from the industry. The paper unveils the sustainable ecotourism development practices of the service providers and the importance of ecotourism certification.

Keywords: ecotourism, sustainability, activities, service providers, certification, Brazil

1. Introduction

Brazil is the fifth largest country in the world and has abundant natural and cultural heritage resources. As the ninth wealthiest economy in the world, the country has experienced significant economic growth, especially in the service sectors (UNCTAD, 2016). Tourism in Brazil has become a significant contributor to economic development and employment generation (OECD, 2018). After hosting the 2014 FIFA World Cup, Paralympic Games, and the Rio 2016 Olympics, the country experienced a significant increase in tourist arrivals. The country witnessed 6.62 million international tourist arrivals in the year 2018, which was the largest in its history (UNWTO, 2019). São Paulo and Rio de Janeiro are the two destinations most visited by tourists (Brazil's Ministry of Tourism, 2019). In 2017, the Brazilian tourism industry placed 16th worldwide in terms of tourism spenders (UNWTO, 2018). Considering the significance of the tourism industry, Brazil has opportunities in sustainable tourism development involving local communities, service providers, and businesses.

The tourism industry of the country is growing because of its comparative advantage in natural habitats that provide opportunities for ecotourism, adventure travel, cultural-historic tourism, and sun and beach tourism. According to UNESCO, Brazil has the richest bio-diversities in the world, which provide ample options for biodiversity conservations and implementing large-scale reforms as enacted in the Sustainable Development Goals of the United Nations 2030 Agenda (UNESCO, 2018). Consequently, the Brazilian government is making efforts to facilitate the situation by implementing legal instruments for best practices. The approaches will help keep checks and balances and encourage community participation in decision-making that will help with conservation of natural environments.

As a community participatory approach for nurturing tourism, ecotourism is a viable option (TIES, 2015). Ecotourism is one of the strongest growing sub-sectors of the tourism industry emerging extensively in the natural areas, is dependent on protected areas and is also a critical source of income for many countries (Hakim, 2017). This subsector of tourism is built on the goals of sustainability, environmental protection, and education (TIES, 2015; McCool, 1995). With abundant naturally endowed tourist locations and year round pleasant weather, the Brazilian tourism industry has great potential to increase the level of ecotourism, and to support the goals of ecotourism.

The ecotourism destinations require more attention in addition to the natural acquisitions and resource endowments. It is very important to understand the role of

small entrepreneurs as service providers (or the tour companies) for providing ample options for tourist preferences. These entrepreneurs can help in ensuring the protection of environment, revenue generation, conservation education, and community development (Jones and Spadafora, 2016). The local community helps provide and facilitate destination management through their involvement in decision-making and park management activities (Mequanint and Gebremedhin, 2015). These efforts invariably support environmental conservation, increases community participation in management and enables social entrepreneurs to simplify tourism and its development to become more sustainable (Drăgoi, et al, 2017).

The role of the tourism service providers (tour companies) is critical in promoting the tourism network of Brazil. However, one of the greatest challenges for these service providers is to incentivize sustainable development in practice. To attain this objective, the service facilitators should practice the norms and regulation associated with ecotourism. These sustainability practices may eventually result in nature protection, visitor enjoyment and support to local communities through income and employment. Tourism marketing alliances can also play a crucial role in facilitating sustainability policies and practices of ecotourism service providers.

The integration of Information Communication Technologies (ICTs) have resulted in advancement in the tourism industry and the provision of tailored experiences to the tourists. The interest of customers is matched and customised, as ICT provides instant information about the tourism destination and tourism products. Marketing through such media also plays a significant role in facilitating sustainability policies and practices of ecotourism. The sustainability goals of the ecotourism programme led by these web-based service providers could be advanced by joint initiatives between the government and the industry to implement standards to certify the ecotourism industry as protected areas. The cooperative programs between the government and the private sector could incentivize education, information, and marketing for service providers. However, the pace of change will depend on improvements in governance, enforcement of laws, and certification of the programs to regulate environmental damage of Brazilian ecosystems from tourism exploration and associated issues. The paper attempts to examine the characteristics, outcomes, conservation goals, certification standards and quality of the web-based ecotourism service providers to meet sustainability practices in the State of São Paulo, Brazil.

2. Review of Literature

Ecotourism focuses on nature-based tourism-related activities that result in minimum damage to the environment, educate tourists, and helps local communities (McCool, 1995). In general, it has a significant association to conservation and sustainability development "that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). The concept of sustainable development is important as it provides environmental protection (Sharpley, 2010), greater priority to community participation, avenues for employment, methods to alleviate poverty (Neto, 2003), and also opportunities to increases export revenues (UNEP, 2013). It is therefore associated with the impacts included in the "triple bottom line" elements (i.e., economic, social and environmental aspects) in addressing the needs of the visitor, industry, and the local community (UNWTO, 2015). As sustainable tourism minimizes the negative externalities to the environment and culture and also generates local income (UNEP, 2013).

To enhance the sustainability of ecotourism destinations, it is essential to understand the travel behaviour of the tourists, including their tour activities, satisfaction levels, and the decision to revisit (Rajasenan, Manaloor and Abraham, 2012). Each tourism destination should strive to protect natural resources, preserve nature through local community involvement, and educate tourists about nature (TIES, 2015). This is because the tourism industry is often blamed for environmental and socio-cultural damages (McCool and Moisey, 2008). Ecotourists, thus motivated to learn about nature and their decisions are determined primarily by their special interests (Hall and Weiler, 1992). Such practices should be beneficial to the local community for ensuring environmental protection (UNEP, 2013).

Given the need for sustainability of resources and the potential for considerable achievements to environmentally conscious tourists to avoid negative impacts, many tourism stakeholders are proposing or implementing certification schemes (Spenceley, 2019). Such certification systems assure customers that the practices rendered by the service providers adhere to minimum standards (Toth, 2002). Honey and Rome (2001) define certification as "a voluntary procedure that assesses, audits, and gives written assurance that a facility, product, process, or service meets specific standards. It awards a marketable logo to those that meet or exceed baseline standards".

Ideally, ecotourism operators voluntarily conform to the standards agreed upon by the industry or an independent body. The goal of an ecotourism certification program is to enhance sustainability practices, provide consumers information about sustainability practices, support marketing practices of companies, and to create opportunities for education and networking (Mazilu, Marinescu, & Gheorgheci, 2017; Font 2007; Issaverdis 2001). The benefit of certification is to ensure sustainability of ecotourism marketing through service providers (Medina, 2005) and to establish responsibility between the various stakeholders (McGahey, 2012). However, there are diverging objectives between the certified and non-certified service providers in tourism promotions (Bustam, Buta and Stein, 2012). Many countries and ecotourism sectors have implemented certification programs with varying levels of success (Font, 2007).

The UNWTO (2004) suggests that indicators for ecotourism certification should focus on environmental conservation, preservation of local communities and their assets, reduction of negative impacts, education and interpretation, marketing and management, and safety. There are many issues to consider in any certification system, including the establishment of a body to administer the system, industry or government leadership, selection of indicators, measure and implement improvements apply standards to a wide variety of settings and operations (Issaverdis 2001). In addition, there are real costs of administering a certification system, which requires certain degree of self-regulatory monitoring.

There are several opportunities and challenges for the ecotourism industry (GEC, 2007). The recent growth of the tourism sector is the result of significant advancement in information technology for marketing (Lai and Shafer, 2005). Tourists use information available on internet sites to learn about the place and service providers. The web-based connectivity and multi-dimensional information available online has helped promote tourism destinations much more than a single-dimensioned promotion with traditional leaflets or brochures (Donohoe and Needham, 2008). Given the fact that information needs to be up to date, it is important to improve online

marketing and publicity to meet the needs of nature tourists and the host community's expectations on a continuous basis (Sangpikul, 2010).

Despite widespread interest in ecotourism certification systems, there are several operational limitations. These limitations include the slow implementation by the private sector, lack of resources related to the marketing of certification programs, lack of recognition for high-achieving operators, costs of becoming a member of the program, lack of ongoing benefits for certified operators, the abundance of certification programs leading to confusion among consumers, fake certification, and the institutionalization of certification programs (Font et al. 2003, Medina 2005, Jamal et al. 2006, Spenceley and Bien 2013). Moreover, there are concerns regarding the perceptions of certification programs that are fully and regularly monitored (Font 2007), which can lead to the successful implementation of guiding practices seeking consistent approaches from the government for tourism development (Fogle and Duffy 2018).

Several researchers have looked at the perceptions of tourists about the certification programs. Esparon et al. (2014), examined the importance of certification programs and the performance of certified operators. Conaghan, Hanrahan, and Sligo (2010), reviewed the awareness and perception of a sustainable eco-certification program on the importance of an international accreditation body for ensuring credibility and confidence in the system. The perception of the stakeholders also highlights the need for a globally recognized label for certification. Margaryan and Stenstad (2017) found that adoption of eco-certification by nature-based tourism companies in Scandinavia depended on their beliefs in the positive outcomes of certification, along with lifestyle, orientation towards sustainability, and organizational context.

Overall, there remains a research need to demonstrate the impact of certification schemes among the service providers related to sustainable ecotourism development. This study proposes that an eco-certification scheme, as represented by membership in an ecotourism organization, will produce greater number of sustainability practices for members than non-members. The research question motivating this study was: How do ecotourism operators in the State of São Paulo promote their businesses through web-based marketing? More specifically, how do ecotourism operators emphasize sustainability practices?

3. Materials and Methods

We chose the State of São Paulo as a case study because this state is a central hub for ecotourism activities in Brazil. In addition, the city of São Paulo attracts a large number of national and international visitors. By 2017, the number of international visits to the city rose to 2.7 million foreign tourists, which is 17% of the country's overseas tourists (São Paulo Turismo, 2018). Of the 65 national tourism destinations, 12 are located in the state of São Paulo (Brazilian Ministry of Tourism, 2009). Beaches were the most visited destinations, followed by interior and historical cities (Government of São Paulo State Division of Tourism, 2011).

For analysis, we used the web pages of ecotourism operators operating in the state of Sao Paulo. We searched through various tourism and ecotourism portals as well as operator lists provided by the state government, national government, several tourism and natural history organizations. We initially used the keywords "ecotourism", "sustainable tourism", "operators", "firm" and "São Paulo". Keywords such as ecotourism and sustainable tourism proved to be too broad for the search, so the study collected an additional list of tourism operators certified by the Brazilian Association of Ecotourism Firms and Adventure Tourism (ABETA). ABETA is the largest certification body in Brazil in nature and adventure tourism with 140 tourism enterprises as members (ABETA, 2015). In total, we found web pages from 110 ecotourism operators which had indicated that their firm was located in the State of São Paulo.

We used content analysis (Weber, 1990) of the entire text on each web page to maintain the semantic consistency of texts as units. Segments of each web page were classified using dichotomous questions based on:

- Certification in ABETA (yes/no)
- Activities offered (yes/no for each activity)
- Sustainability (yes/no for each item)
    - Educational: provide guides, provide pre-tour information provided, address conservation issues, provide an area map, and connect with local curricula,
    - Environmental: provide a mission statement, donate to sustainability causes, provide opportunities for tourists to donate, indicate water conservation programs, indicate recycling programs, indicate wildlife and agricultural conservation programs, indicate research programs, and use eco-friendly buildings,
    - Social: describe history and culture, indicate family connections, discuss benefits for community, highlight identity and culture
    - Economic: indicate local ownership and local employment
- Other: awards won, limit on the number of tourists in each group (yes/no)
- Location of activities (natural/artificial)

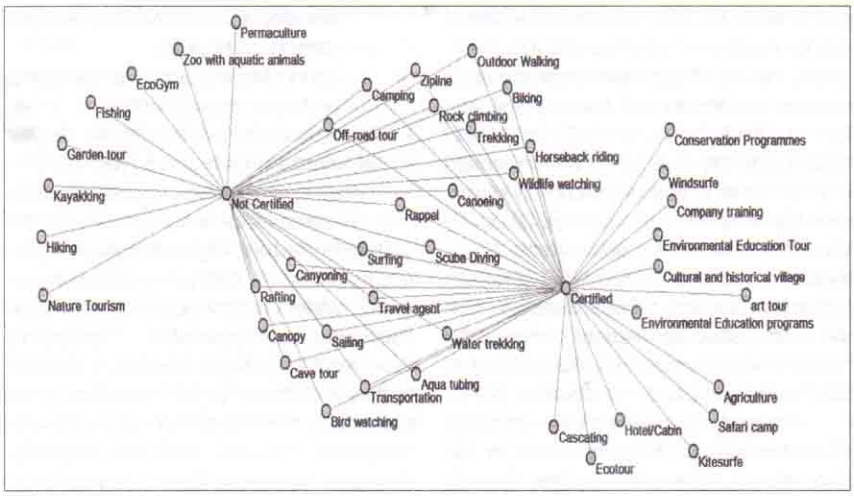
We used factor analysis to identify the underlying factors. Eighteen variables (Recycling programs, Energy conservation programs, Water conservation programs, Wildlife/Agricultural/Conservation programs, Eco-friendly buildings, Identity & Culture, History & Culture, Tourist interaction, Local Ownership, Benefits & Community, Mission Statement, Etiquette, Research programs, Donations to society, Opportunity for Tourist to donate, Provides Guides, Eco-Tour Information, Activities/Training/Guides) were used in the factor analysis to identify the factors that illustrate the specific goals of the service providers. We also used a logistic regression model to ascertain the pertinent factors associated in the certification aspect of the ecotourism operator's/service providers. Instead of a classical multiple regression model, a logistic regression model is used because of the nature of the dependent variable (dichotomous variable, binary variable). The dependent variable is non-linearly linked to independent variables while its logit is linear. The regression model helps ascertain the strength of relationship between the dependent and independent variables.

4. Results and Discussion

Out of the 110 ecotourism service providers, 69 were certified (62.7%) and 41 were non-certified (37.3%). Altogether, 44 ecotourism activities were identified from the selected 110 service providers. Of these activities, 13 were offered by the certified operators, 8 activities were offered only by non-certified operators, and 23 were common for both certified and non-certified operators (Figure 1). Regarding the location of the ecotourism program, 21 activities were offered in natural zones, 7 activities were offered in artificial zones, and 16 activities were offered in both zones (Figure 2).

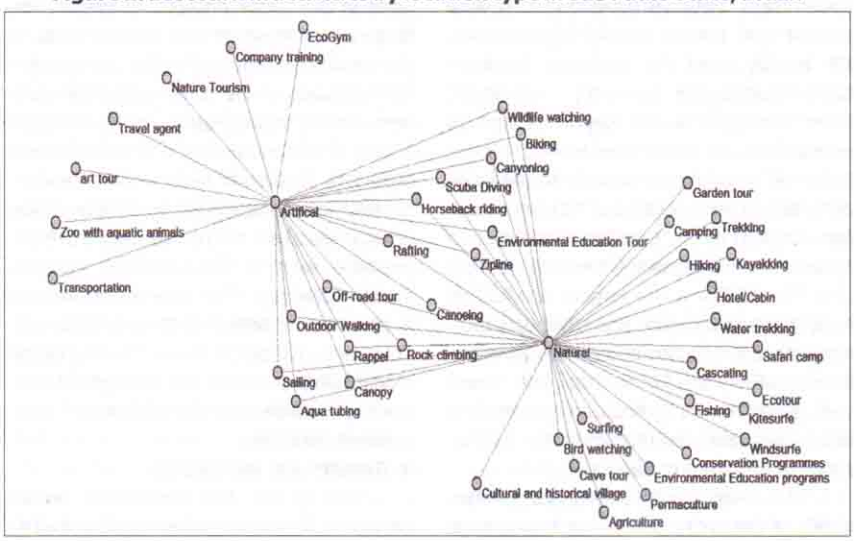
We classified the information regarding the activities offered by the service providers (372 in total) into six categories (Figure 3). Of these categories, the adventure category had the most activities, followed by nature-based activities, knowledge-based, vehicle-based, cultural-based, and other activities. The dominance of adventure-based and nature-based activities is not surprising given that these activities oc-

Figure 1: Ecotourism activities offered by certified and non-certified tourism operators in São Paulo State, Brazil.



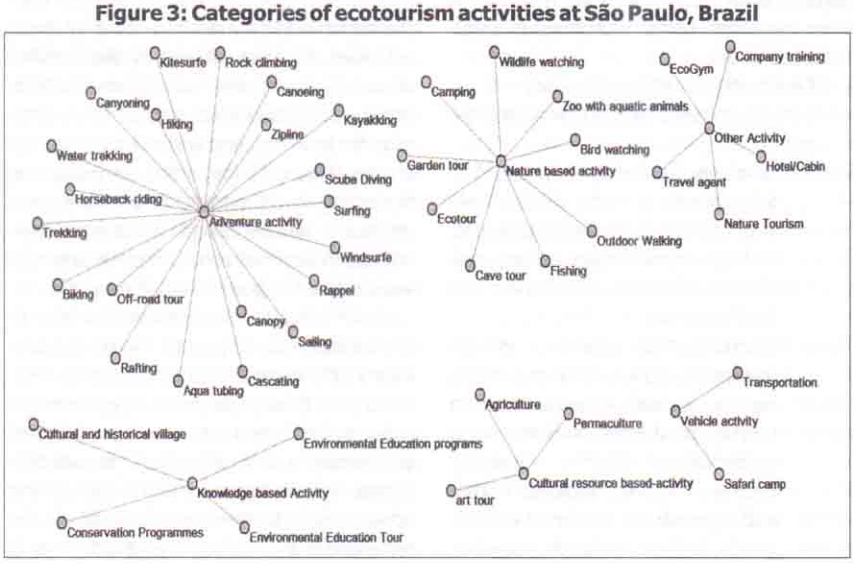
Source: Compiled from the Data.

Figure 2: Ecotourism activities by location type in São Paulo State, Brazil



Source: Compiled from the Data.

Figure 3: Categories of ecotourism activities at São Paulo, Brazil



Source: Compiled from the Data.

cur in ecosystems and landscapes that are rich and diverse.

We also used CHAID (Chi-square Automatic Interaction Detector) tree diagram to understand interaction between variables. CHAID is a visual decision tree technique that can be used for prediction, classification, as well as to determine interaction between variables. It allows to predict how responses to some variables affect other variables. In the CHAID tree diagram (Figure 4), there is no significant difference between the types of activities and whether or not that activities are offered by a certified operator ($p = 0.210$, chi-square = 7.145). In total, certified operators offer 69.4% of the overall activities, compared to only 30.6% for the non-certified operators. Figure 4 also shows the range of activities offered by certified and non-certified operators.

There were significant differences in the kinds of activities by location (natural or artificial). About 21 activities are offered only in natural locations, 7 activities are offered only in artificial locations and 16 activities are offered in both locations. Table 1 shows that 86.8% of the programs were conducted in the natural settings. There were significant differences in the kind of activities by zones (natural or artificial). The adventure-based activities constituted 74.9% of the total natural zone activities and only 40.9% of the artificial zone activities.

Overall 86.8% of ecotourism destinations were located in natural settings compared to 13.2% in artificial locations (Table 1). Table 2 indicates that 67.8% (219 activities out of 323 programs) of the natural zone activities located in natural areas were certified. However, 79.6%, (i.e. 39 activities out of 49) of activities in the artificial zone were certified. This highlights the significance of certified activities like hotel/cabin, travel agents, parks, zoos, and gardens in sustainability practices. Altogether, 258 out of the total 372 activities were offered by certified operators.

The data further highlights the significance of the certification and zone preference based on the activities of the service providers (Figure 5). Figure 5a shows activity category by certification status (certified and non-certified) and Figure 5b shows activity category by location of the activities (natural and artificial zones). The majority of the operators are certified and offer activities conducted in natural settings.

4.1. Ecotourism goals of the Service Providers

In order to understand the main factors that nurture the ecotourism goals of

Figure 4: Activity category by certification status.

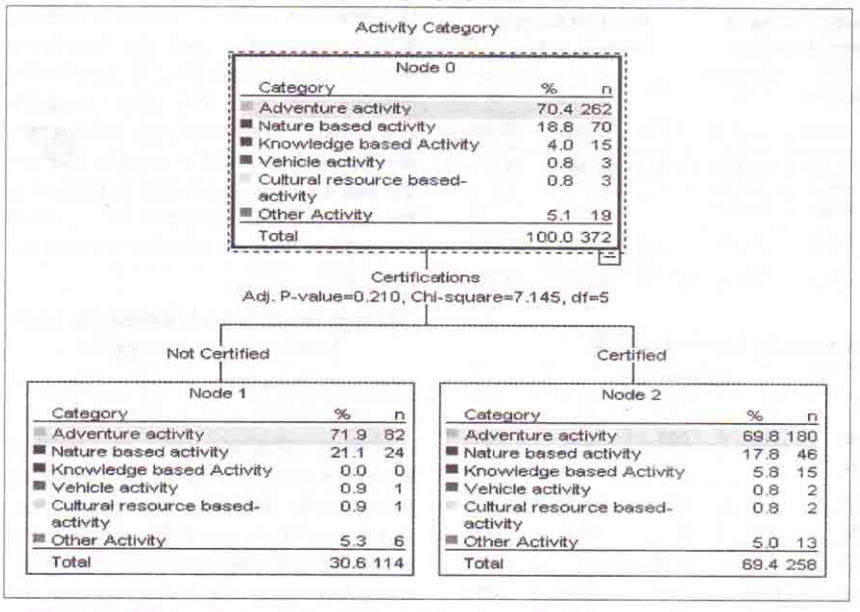


Table 1: Activity and zone area of ecotourism destinations in São Paulo, Brazil

Activity Category	Number	Zone (Number)		Zone (%)	
		Natural	Artificial	Natural	Artificial
Adventure activity	262	242	20	74.9	40.8
Nature based activity	70	62	8	19.2	16.3
Knowledge based Activity	15	14	1	4.3	2
Vehicle activity	3	1	2	0.3	4.1
Cultural resource based-activity	3	2	1	0.6	2
Other Activity	19	2	17	0.6	34.7
Total	372	323	49	86.80	13.20
Chi-Square Tests- Activity	Sig		.		0.000
category and Zone	Chi-Square				113.059

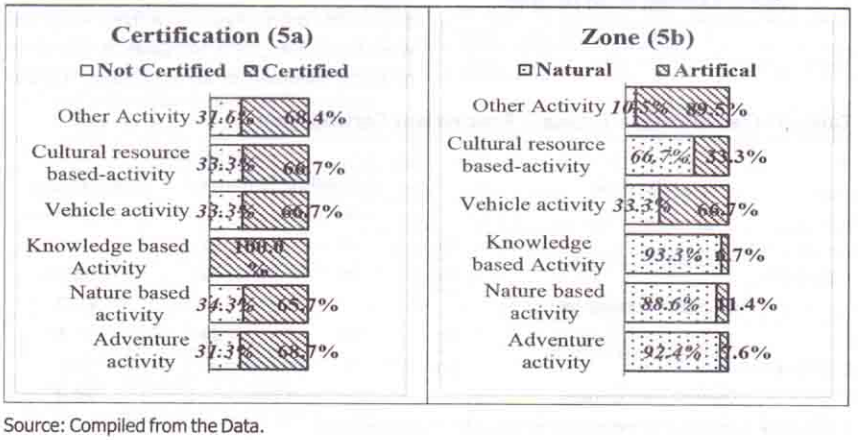
Source: Compiled from the Data.

Table 2: Certifications by zone preference

Certification	Zone				Total Number	Total in %
	Natural		Artificial			
	Number	percent	Number	percent		
Not Certified	104	32.2	10	20.4	114	30.6
Certified	219	67.8	39	79.6	258	69.4
Total	323	100.0	49	100.0	372	100.0
	86.8		13.2		100.0	

Source: Compiled from the Data.

Figure 5: Activity, certification and zone area of the destinations in São Paulo, Brazil



Source: Compiled from the Data.

the service providers in São Paulo, Brazil, 18 statements were included in a factor analysis. The Cronbach's alpha coefficient of the selected variable was 0.861, which indicates high reliability since it exceeded the minimum standard of 0.70 (Tavakol and Dennick, 2011). To measure the strength of the relationship among variables, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.778, which is greater than the generally accepted minimum of 0.50 (Burns and Burns, 2008). The Bartlett's test was significant (approximate Chi-Square of 847.112, df = 153, p <0.001). Therefore, it was appropriate to perform a factor analysis on these data.

The factor analysis revealed five factors with Eigen value greater than 1; these factors accounted for 66.4% of the total variance (Table 3). Initially in the extracted sum of squared loadings, the first factor explained about 30.8%, the second factor explained about 12.8%, the third factor explained 8.7%, the fourth factor explained 7.5%, and the last factor explained about 6.7% of the total variance. Later, the total amount of variance accounted in the extracted solution was redistributed over to the five extracted factors in the rotated sum of squared loadings with the percentage of variance for the first factor at 18.0%, the second factor at 16.0%, the third factor at 12.0%, the fourth factor at 10.9%, and the last factor at 9.6% of the total explained (cumulative) variance of 66.4%.

The rotated component matrix (Table 4) represented the rotated factor loading which shows the weight and correlation between the variables and the factor. In the rotated component matrix of the factor analysis, the factors were explained based on the factor loadings of 0.5 and above. The first factor was labelled "Environmental sustainability" since it included variables relevant to the conservation of waste, energy, water, wildlife, and more. The second factor was labelled "Socio-Cultural sustainability" since it included variables such as identity & culture, history, tourist interaction, and local ownership, which shows the assurance of promoting and preserving the socio-cultural aspect of the community. The third factor was labelled "Conduct and ethical operations" since it included variables such as benefits to the community, mission statement, etiquette, and research programs. The fourth factor was "Economic contributions," since the variables such as operator donations and opportunity for tourists to donate clearly depict another important aspect of ecotourism which promote and generate revenue from tourist

Table 3: Total variance explained with factor analysis

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.539	30.770	30.770	5.539	30.770	30.770	3.241	18.008	18.008
2	2.295	12.752	43.522	2.295	12.752	43.522	2.873	15.962	33.970
3	1.568	8.712	52.234	1.568	8.712	52.234	2.155	11.973	45.943
4	1.360	7.557	59.791	1.360	7.557	59.791	1.961	10.895	56.837
5	1.197	6.651	66.442	1.197	6.651	66.442	1.729	9.605	66.442

Table 4: Rotated Component Matrixa-Factor Analysis

	Component				
	1	2	3	4	5
Recycling programs	**.798**	.082	.005	.135	.196
Energy conservation programs	**.776**	.169	.162	.234	.029
Water conservation programs	**.708**	.176	.390	.025	-.124
Wildlife/Agricultural/Conservation programs	**.692**	.319	.016	.065	-.218
Eco-friendly buildings	**.621**	-.060	-.148	.317	.248
Identity & Culture	.098	**.874**	.234	.060	.146
History & Culture	.113	**.831**	.221	.057	.039
Tourist interaction	.129	**.735**	.019	.048	.238
Local Ownership	.251	**.609**	.175	.361	.131
Benefits & Community	.078	.201	**.728**	.062	-.056
Mission Statement	-.198	.069	**.691**	.187	.160
Etiquette	.282	.176	**.630**	-.031	.287
Research programs	.453	.125	**.554**	-.023	.097
Donations to society	.218	.108	-.012	**.896**	-.034
Opportunity for Tourist to donate	.206	.139	.218	**.859**	-.067
Provides Guides	-.071	.079	.055	-.017	**.839**
Eco-Tour Information	.067	.253	.238	.038	**.606**
Activities/Training/Guides	.324	.377	.028	-.244	**.519**

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

visits to benefit the community. The last factor was "Education and Interpretation" which included variables such as guides, ecotour information, and guide training.

4.2 Certification Criteria of the Ecotourism Program

To further understand the variables associated with ecotourism certification amongst the service providers, a logistic regression model was used to estimate the predicted dependent variable 'ecotourism certification' using the pertinent independent variables. The model predicted the logit that was the rate of change in the "log odds" as X changes. The calculated exp (B) was the expected effect of the independent variable on the "odds ratio", which was the probability of the event divided by the probability of the non-event and they were in log-odds units.

The prediction equation was:

$$\log (p/(1-p)) = b_0 + b_1 \times x_1 + b_2 \times x_2 + b_3 \times x_3 + b_4 \times x_4 + b_5 \times x_5 + b_6 \times x_6 \ldots . (1)$$

In this model, p was the predicted probability of being included in an ecotourism certification program, and each x was a predictor variable included in the model (i.e. 'type of destinations for ecotourism', 'criteria for environmental conservation', 'socio-cultural assets for the community', 'provision for education and interpretations', 'conduct and ethical operations of the firm'; and 'economic contributions from the tourist as donations').

Table 5: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.521	.197	6.968	1	.008	1.683

As a precondition to use the logistic regression model for model prediction, it was important to test the hypothesis whether the constant term is significantly different from zero. The Wald Chi-square test in Table 5 examines the null hypothesis that 'the constant is equal to 0'. From the test it was evident that the constant in the equation was significant with p-value <0.008 and thus we rejected the null hypothesis.

Table 6: Hosmer and Lemeshow Test-Ecotourism Certification

Step	Chi-square	df	Sig.
1	10.175	8	.253

Next, we determined the overall fit of the model using the Hosmer and Lemeshow test (Table 6). As per the condition of "non-significance" for a favourable outcome, the p-value (0.253) was higher than the significance level (0.05). We concluded than the model fit the observed dataset. Hence, the model predictions could be determined with the given variables.

Table 7 shows the percent of cases that were correctly predicted by the model increased from 62.7% in the constant model to 70.9% in the full model.

We assumed a desired significance level less than 0.05. In Table 8, the variables of education/interpretation, and environment conservation positively contributed the model, whereas conduct and ethical operations of the company were less important in the model. The coefficient for education/interpretation says that, holding the type of destination, environmental conservation, socio-cultural, conduct and ethics, and economic contributions at a fixed value, we will see a 84.46 % increase in the odds of being included in an ecotourism certification program, for a one-unit increase in education/certification score since exp (0.527) = 1.693. Similarly, keeping type of destination, education/interpretation, socio-cultural, conduct and ethics, and economic contributions at a fixed level, we would see a 63.59% increase in the odds of being included in an ecotourism certifi-

Table 7: Classification Tablea,b Ecotourism Certification

Observed			Predicted		
			Ecotourism Certification		Percentage Correct
			no	yes	
Step 0[a,b]	Ecotourism Certification	No	0	41	.0
		Yes	0	69	100.0
	Overall Percentage				**62.7**
Step 1[b]	Ecotourism Certification	No	13	28	31.7
		yes	4	65	94.2
	Overall Percentage				**70.9**

a. Constant is included in the model. b. The cut-off value is 0.500

Table 8: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Type of Destination	.060	.533	.013	1	.910	1.062
	Education/Interpretation	.527	.267	3.891	1	.049	1.693
	Environment/Conservation	.417	.194	4.627	1	.031	1.517
	Socio-cultural	.238	.223	1.132	1	.287	1.268
	Conduct/Ethics	-.584	.273	4.579	1	.032	.558
	Economic contributions	-.105	.639	.027	1	.869	.900
	Constant	-.409	.818	.250	1	.617	.664

a. Variable(s) entered on step 1: Type of Destination, Education/Interpretation, Environment/ Conservation, Socio-cultural, Conduct/Ethics, Economic contributions.

cation program, for a one-unit increase in environmental conservation score since exp(0.417)=1.517. However, a 1% increase in conduct/ethics predictor variable, while keeping all other predicator variables at a fixed level, would lead to a 82.01% decrease in the odds of being included in an ecotourism certification since exp (-0.584) = 0.558. All, the remaining predictor variables were statistically insignificant in the model. Hence, the model establishes that the service providers were giving prior importance to the sustainability aspects of ecotourism.

The fitted logistic regression equation was;

$$\log (p/(1-p)) = -0.409 + 0.060 \times \text{type of destinations} + 0.527 \times \text{education and interpretations} + 0.417 \times \text{environmental conservation} + 0.238 \times \text{socio cultural assets} - 0.584 \times \text{conduct and ethical} - 0.105 \times \text{economic contributions} \quad \ldots. (2)$$

The activities of the ecotourism service providers were prioritised based on the certification and the location of the programs. This eco-certification system presumed a well-planned ecotourism network. This will ultimately result in standardised eco labelling, improved tourist value, facilitate education and interpretation, enhance local communities, identify socio-cultural and environmental impacts, and promote sustainable use of natural environments (McCool, 1995; TIES, 2015). Hence, we demonstrate that the ecotourism certification is related to the sustainability efforts vis-à-vis providing conservation goals to the environment and educating ecotourists.

5 Limitations and Future Research

The study's limitations include the method of collecting data from the service providers' websites. No efforts were made to verify the accuracy of the information that service providers posted on their website. Nor, did we try to find out if the website was being updated on a regular basis. The study focused only on information available on the websites. No surveys of service providers or tourists were conducted to determine accuracy of information on websites. Also, most websites from which information was collected and analysed were in Portuguese. We depended on our Research Intern (HN) who was fluent in Portuguese. A survey-based research could be of help for future research.

The results in this study are based on information related to certification provided by service providers' websites. A survey based future research could help verify and determine satisfaction among ecotourists. Potential focus could be on questions such as: (1) Does certification lead to an increase in number of visitors wanting to experience ecotourism opportunities? (2) What impact does the certification have on biophysical characteristics of the ecotourism sites? and (3) How do service provider's and visitors perceive certification programs? (4) Are customers satisfied with the experiences based on information they found on the websites?

6 Conclusions

The study illustrates the main characteristics that link ecotourism certification, sustainability activities, and ecotourism service providers in São Paulo, Brazil. We offer two main conclusions. First, the activities associated with the ecotourism program were strongly related to certification. The majority of ecotourism operators, 62.7%, were certified service providers, and 69.4 % of the total activities of the service providers were certified activities; in addition, 86% of the ecotourism activities occurred in natural settings. Out of the total 44 activities, 13 were offered only by certified providers.

Second, the results from the factor analysis showed that environmental conservation was the foremost goal of the service providers followed by the socio-cultural, conduct and ethics, economic contributions, and education and interpretation. The factor analysis also identified the pertinent factors by making use of a model for certification criteria of the service providers. The variables of environmental conservation and provision of education and interpretation positively contributed the model, highlighting the importance of sustainability aspects of ecotourism, rather than just profit motivations. Based on the factor loading results, eco-tourist service providers gave importance to "Environmental sustainability", "Socio-Cultural sustainability Conduct and ethical operations", "Economic contributions", and "Education and Interpretation".

Certification for ecotourism operators can help promote sustainability of ecotourism destinations. The logistic regression results suggest that a 1-unit increase in the education/interpretation score and environmental conservation score led to a 69% and 51% increase, respectively, in the odds of being included in an ecotourism certification program. Thus, a policy intervention that can lead to more certified ecotourism providers will help safeguard the destination and meet the sustainability criterion.

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