Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

GREEN MARKETING STRATEGIES FOR SUSTAINABLE MUSEUMS

OLIVIA GEORGE*
Research Scholar, Reg.no:18134011062050, Department of Management Studies,
Nesamony Memorial Christian College, M.S. University, Abishekapatti,
Tirunelveli-627 012, TamilNadu, India
Corresponding author: oliviageorgeece@gmail.com

Dr. C L JEBA MELVIN
Associate Professor and Head of Research Centre,
Department of Management Studies, N.M.ChristianCollege,
M.S. University, Abishekapatti, Tirunelveli-627012, TamilNadu, India

Abstract:
A massive influx of tourists is witnessed every year in the cultural and heritage sites of India experiencing the unique culture of the tourist spots, especially with the aim of gaining knowledge about the pasts. This intention of tourists is usually served by the museums which showcase the physical evidence of humankind and the environment. A museum packs within itself a rich culture and heritage. It is a growing demand by the responsible tourists in recent years that museums, being an institution for collecting and preserving artefacts, should take up the responsibility of protecting nature also for its sustainability. This study aims to analyse the gap between the tourists' expectations and perceptions, thus aiding in the assessment of their satisfaction with the green services of the museum. It is found that the tourists' expect more of ecotangibles(green practices) than any other dimensions. There is certainly a dearth of literature studying the green practices that can be implemented in a museum. Hence, this paper also focuses on developing a green marketing mix for museums through secondary data available on green practices employed worldwide to create greener and sustainable museums and attract many responsible tourists towards it.

Keywords: Green marketing mix, museum, sustainable museums, museum marketing, ECOSERV, service quality, gap analysis

Introduction

'The future is either green or not at all' – Bob Brown, Australian Environmentalist

In a timeline of an uncertain future, every aspect of our ever-expanding modern world is in need of severe green initiatives to ensure a clean and sustainable future for all generations to come. Every industry has begun to incorporate green strategies in its vision to sustain and retain customers.

Tourism has also gradually evolved from the objective of providing mass travel experiences to unique and responsible travel experiences due to the increasing concern of ecotourists on environmental issues like climate change, pollution, deforestation and so on. Over the last decade, the rise of a new segment of responsible tourists has led to the application of numerous green practices in tourist destinations. In fact, such green practices have been a source of motivation for tourists to travel more.

Despite the widespread mindset that tourism is a smoke-free industry, it is actually a carbon-intensive one. As the tourism industry witnessed a surge in tourists' arrival, a

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

surge in carbon emissions was too observed. It was estimated by a study published in Nature Climate Change that worldwide tourism accounts for about 8% of the total greenhouse gas emissions[1]. Consequently, tourists began to have expectations to mitigate their carbon footprint without giving up their love for travel. Their decision to choose a particular destination depended on how much they could balance nature and travel.

Theoretical framework

Museums – epitomes of conserving culture and heritage

The word 'Museum' was derived from the Greek word 'Mouseion' meaning 'Seat of the muses'. Museums are places where knowledge and creation go hand in hand. The International Council of Museums (ICOM) in 2007 defined a museum as "a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment". Museums are time machines that allow people to communicate with the past and the future(Lumley, 1988)[2]. Kerala, home to the myriad of art and culture, stands out in creating exemplar museums not only in India but at an international level. One perfect example of this is the Kerala Biodiversity museum, the first of its kind in India, which employed many innovative, green and sustainable practices. It was developed in a revamped building that was constructed decades ago. Neither were there any destruction of the ecosystem nor any lack of steps to safeguard the environment around it. It also paved a way to create awareness on ways to conserve mother nature and its biodiversity.

Museum Marketing

McLean(1994) proposed a framework for museum marketing, which shows a marketing mix different from that of the traditional marketing mix, that includes the Building, Staff, Organisational mechanisms, Public and Collections[3].

Being a service-oriented tourist attraction, the museum adopts the expanded version of the marketing mix suitable for the service industry. The 7Ps employed in museum marketing are Product, Price, Place, Promotion, Process, People, and Physical evidence.

Product

Museums offer not only a single product but a variety of them. Museum product is the total of the images and perceptions of the tourists perceived through the tangible and intangible dimensions of a museum. Usually, these museum products are categorised into three levels viz.,

a) Actual products are the tangible physical objects like artefacts collected and preserved in the museum,
b) Augmented products are the non-physical value-adding aspects like audiovisual support, seminar rooms,

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

c) Core products are the benefits of the product that makes it valuable to the tourists like knowledge gained and the experience

Price
Pricing strategies may vary for every museum since they provide non-homogenous services. The prices include the admission fee, membership fee, special fee during special events, museum shop items cost, price of objects loaned to other museums, facility rental charges, and donor supports. It is best to apply the variable or dynamic pricing for museums as low-middle income groups are the significant segment of tourists visiting the museums.

Place
The element 'place' of the museums defines where and how the service is delivered. In the case of museums, the place refers to the building where the artefacts are placed, the museum's location and its accessibility, and the medium of ticket booking services.

Promotion
The message used to convey the services to the prospective tourists and the channels used to send these messages comprises the element of promotion. It is intended for the fund providers also. Promotions can be through full-scale advertising, word of mouth and public relations.

Process
The element 'process' is the route through which the service moves from the service provider to the tourists. The product or service and the process by which the service is delivered to the tourists are inseparable since both the 'experience' and the 'museum services' are provided at the museum itself. It begins with the process of booking tickets for entry and ends after the tourists leave the museum.

People
This element forms a vital part of the museum marketing strategy. It includes the tourists, museum staff, board members and managers of museums. The backstage personnel includes curators, educationalists and exhibition specialists.

Physical evidence
The intangibility aspect of the museum services is compensated by its tangible aspects. The physical evidence seen in a museum is its lighting, transparent cases safeguarding the artefacts, the building itself, signs, and the arrangement of artefacts.

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

ECOSERV Scale

When it comes to a service industry, it is a must to assess the quality of the service provided to help in improving customer satisfaction. Parasuraman and his team(1988) proposed a scale consisting of five dimensions to assess the service quality of any service industry named SERVQUAL scale[4]. But it failed to assess the ecological aspects of the services. Later, Khan M(2003) developed a scale that incorporates the sixth dimension namely Ecotangibles. This study used the 'ECOSERV scale' which was again modified to suit the museum services[5]. The six dimensions modified to assess the green services of a museum are,

- **Ecotangibles –** availability of facilities that are safe and appropriate to the environment, equipment that minimizes the degradation of nature
- **Tangibles** – availability of materials and personnel that are visually appealing and reflecting the local influence
- **Empathy** –personal attention and caring towards the tourists
- **Reliability** – ability to perform the service as promised, dependably and accurately
- **Responsiveness** – willingness to provide services promptly and help the tourists
- **Assurance** – knowledge and courtesy of museum employees, ability to inspire trust and confidence in tourists, and provide necessary information

Research Aim

The study aims to investigate the satisfaction of tourists with the green services provided by the museums in Kerala. It also aims to propose green marketing strategies for museums in Kerala, the repositories of relics and knowledge, to enhance sustainable tourism.

Methodology

The study is quantitative in nature and was done among the tourists visiting the prime museums in the Thiruvananthapuram district of Kerala. The museums chosen for the study were the Kerala Biodiversity Museum, Napier Museum, and Natural History Museum. 35 tourists were chosen from each museum using a simple random sampling method giving a total of 105 respondents.

The "ECOSERV Scale" was employed after modifying it to apposite with green services specifically provided by the museums. It consisted of three parts. The first part comprised the demographic profile of the tourists such as gender, age, education, profession and the frequency of visits. The second part was used to assess the tourists' expectations and the third part enquired their perceptions on it. This included 30 items on 6 dimensions: ecotangibles(3 items), tangibility (8 items), reliability (5 items), responsiveness (4 items), assurance (5 items) and empathy (5 items). A 5 point Likert-type scale ranging from Strongly disagree=1 to Strongly agree=5 was used to evaluate the level of expectations and perceptions. The expectations of the tourists were collected at the entrance of the museum to ensure accurate responses while their perceptions were collected at the exit of the museum.

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

The secondary sources of information included data from journal articles, internet sources, published conference books and organizational annual statistics.

Results and Discussions

a)Profile of the tourists

Table 1: Respondents' Demographics

Gender	**In %**	**Age**	**In %**	**Education**	**In %**
Male	**43.81**	16-25	**12.38**	SSLC & below	**2.86**
		26-35	**53.33**	HSC	**40**
Female	**56.19**	36-45	**20.96**	Undergraduate	**31.43**
		46-55	**9.52**	Post Graduate	**25.71**
		56+	**3.81**	Others	**0**
Status	**In %**	**Profession**	**In %**	**First time visitor**	**In %**
Married	**73.33**	Student	**8.57**	Yes	**62.85**
		Professional	**45.72**		
Unmarried	**26.67**	Business	**10.47**	No	**37.15**
		Service	**2.86**		
		Unemployed	**32.38**		

Source: Primary data

From Table 1, it can be seen that out of 105 respondents, 43.81% were male and 56.19% were female. 12.38% belonged to age 16-25, 53.33% were of age 26-35, 20.96% were of age 36-45, 9.52% were of age 46-55, 3.81% were of age 56 and above. 2.86% studied SSLC, 40% studied HSC, 31.43% were undergraduates and 25.71% were postgraduates. 73.33% were married and 26.67% were unmarried. 8.57% were students, 45.72% were professionals, 10.47% were self-employed, 2.86% were service people and 32.38% were unemployed. 62.85% of the tourists were first-time visitors.

a) Data Reliability

The Cronbach' alpha method[6] was used to check the reliability of the data collected. 0.74 and 0.88 were the Cronbach's Alpha values for expectations and perceptions respectively. The test revealed that the scale has good reliability as suggested by Nunnally.

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

b)Analysis of gap in Green Service Quality

Table 2: ECOSERV Gap Analysis

Sl. No.	Dimensions	Expectation mean	Perception mean	SERVQUAL gap(P-E)
	Ecotangibles			
1	Facilities are appropriate to the environment	4.4667	2.9238	-1.5429
2	Museum employs equipment that minimizes the degradation	4.4286	2.7429	-1.6857
3	Facilities are environmentally safe	4.419	3.3333	-1.0857
	Mean	**4.4381**	**3**	**-1.4381**
	Tangibility			
4	Materials reflect local influence	3.7714	3.7714	**0**
5	Provide local entertainment	3.9238	1.6095	**-2.3143**
6	Materials visually appealing	3.8476	3.8857	**0.0381**
7	Facilities visually appealing	3.8952	3.8857	**-0.0095**
8	Employees in local attire	3.9143	1.9810	**-1.9333**
9	Facilities reflect local influence	3.8952	3.6190	**-0.2762**
10	Employees in comfortable attire	3.9619	4.2286	**0.2667**
11	Facilities in unpolluted setting	4.1238	2.7429	**-1.3809**
	Mean	**.9167**	**3.2155**	**-0.7012**
	Reliability			
12	Provide services at the promised time	3.3143	3.8381	**0.5238**
13	Promise to do service by a certain time	3.4286	4.1905	**0.7619**
14	Perform the service right the first time	3.6952	3.9714	**0.2762**
15	Insist error-free service	3.4190	3.5333	**0.1143**
16	Show sincere interest in solving a problem	3.5048	3.1619	**-0.3429**
	Mean	**3.4724**	**3.7390**	**0.26666**

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

	Responsiveness			
17	Employees are willing to help	4	3.3714	-0.6286
18	Prompt service to tourists	3.9619	3.8952	-0.0667
19	Always responds to tourists' queries	3.8667	3.3714	-0.4953
20	Inform tourists when a service will occur	4.4286	3.1048	-1.3238
	Mean	**4.0643**	**3.4357**	**-0.6286**
	Assurance			
21	Trust in transactions	4.2286	4.4000	**0.1714**
22	Necessary information is provided	3.8190	3.6095	**-0.2095**
23	Adequate knowledge of employees	4.2952	3.5429	**-0.7523**
24	Staff are consistently courteous	4.2762	3.8190	**-0.4572**
25	Instil confidence in tourists	4.2571	3.8286	**-0.4285**
	Mean	**4.1752**	**3.84**	**-0.33522**
	Empathy			
26	Individual attention to tourists	2.7714	2.1714	**-0.6**
27	Convenient working hours	4.1238	4.2000	**0.0762**
28	Prioritize the needs of tourists	3.1143	3.9714	**0.8571**
29	The staff understands the needs of the tourists	4.3143	4.0857	**-0.2286**
30	Personal attention to all tourists	2.8857	2.0952	**-0.7905**
	Mean	**3.4419**	**3.3047**	**-0.13716**

Source: Primary data

It is being inferred from the study that the most important aspect of service quality that the tourists expect is ecotangibles(mean=4.4381). Previous studies have found a relationship between ecotangibles and ecotourists. But in this case, even the common tourists' expectations of green practices while visiting the museums are high. This shows that the tourists are obviously becoming more environment-conscious due to increased awareness campaigns on climate change.

The second most important service dimension expected by the tourists is Assurance(mean=4.1752). This can be because the sole purpose of visiting a museum is usually to gain knowledge and hence they would expect the staff to be

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

courteous and knowledgeable so that they could acquire proper information. This is followed by the dimensions like Responsiveness and Tangibles. The least expected dimensions are Reliability and Empathy. This may be because the museum tourists expect knowledge the most and not any other special care towards them.

The study also reveals some interesting results on the perception of the tourists. The highly perceived service quality dimension is Assurance(mean=3.84) followed by Reliability(mean=3.739). Since museums are knowledge treasures, it is necessary to assure the tourists and create an image of a reliable museum. The least perceived quality is ecotangibles which is unfortunately not a pleasant one since their highest expectation is not being fulfilled.

'Reliability' is the only service quality dimension that shows a positive gap. This might be due to their low expectation of reliability dimension. All other dimensions show a negative gap which indicates dissatisfaction with the green services provided by the museums. The highest negative gap is observed in the ecotangibles service quality(mean gap= -1.4381) which indicates immediate attention from the State Government.

Green Marketing Mix for Green(er) Museums-Proposed strategies

To increase the tourists' satisfaction, few green strategies have been proposed after a thorough exploration of sustainable practices of museums all over the world.

Green product

The actual products in a typical museum are the artefacts and a variety of exhibits. These products cannot be altered, but the case in which they are preserved can be made sustainable by constructing them with eco-friendly materials and glasses. The ionised water, a strong cleaning agent, can be used to clean the display glasses which replaces the chemical cleaners, thus reducing the environmental harms and improving the air quality. The temperature and moisture inside the cases could be regulated through green technologies.

The augmented products like seminar rooms can be made energy efficient to ensure sustainability—activities like turning off the lights when not in use can also enhance the greenness.

The core product that the tourists obtain in a museum is rich experience and knowledge. Thus, creating awareness of sustainability and the negative human-made environmental impacts on the earth can be encouraged. This can be done through seminars, workshops, theatrical shows, and eco-friendly displays. Tourists can be offered an experience to contribute to the museum's green activities. The plastic-free and pollution-free environment can do magic in providing a rich and greener experience.

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

Green price

Usually, green pricing involves premium pricing due to the higher cost of implementing green practices. Museums can provide tourists with options to opt for carbon offsets at premium prices. At the same time, online booking of tickets can also offer options to donate to environmental causes. A Green fee can be collected to host seminars, exhibitions and educational tours. Museums can also get premium fees during peak hours to reduce the crowding of visitors. Visitors can also be given discounts on the entry fee for using public transportations or carpooling to museums.

Green place

The building in which the exhibits are placed should be adhering to sustainable practices like Reducing, Reusing and Recycling plastics, waste management, energy-saving technologies, water conservation and altering the available facilities without building a new one. It should be designed to capture rainwater and be powered by solar energy. Bio-toiletries could be installed instead of expensive traditional restrooms.

The location of the museum should be accessible and desirable. Tourists expect the location to be free from wastes and pollution. Planting trees should be encouraged to create a desirable environment around the museum. Availability of public transportation and carpooling is an effective initiative in reducing pollution. Virtual museums and augmented reality museums are also an opportunity to experience the cultural heritage of museums without leaving any carbon footprints.

Green promotion

Promoting museums through online platforms like social media, e-mails, and mobile phones can help in mitigating the harmful effects of offline promotions. The advertisements can be designed to explain the need to protect the environment. Campaigns to clean the streets, plant trees, and create awareness on flora and fauna can be done to attract more visitors.

Green people

The staff members form an important key in the success of any sustainable efforts. They could be motivated to use public transportation, motorbikes or cycles. Practices like ‘Bike to Work Week’ and ‘A garden to grow’ can be effective green practices. They could also be trained in sustainable practices by creating a sustainable committee chaired by the staff itself.

The local community can also be developed by sourcing the required products from them and promoting fair trade practices. The tourists can also be offered the opportunity to experience the benefits and satisfaction of involving themselves, maybe once a week, in implementing the green practices guided by the trained museum staff.

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

Green process

To ensure the sustainability of a museum, the annual carbon footprint of the museum can be calculated with appropriate carbon calculators and take necessary actions to curb the carbon footprints. An energy audit to assess the energy usages and leakages can also be done to track the sustainable performance of the museum.

Museums can apply for Leadership in Energy and Environmental Design (LEED) certification to gain trust among green tourists. It is a certification that is provided after assessing the sustainability of the building.

Green Physical Evidence

The museum can be equipped with a 'living roof' to provide insulation to the building. This is a recent innovation in sustainable practices that reduces the need for artificial heating and cooling, thus saving energy. This roof can also be packed with indigenous plants that provide a nurturing environment for the fauna of the museum location. Vertical gardening on the outside walls of the museum also lowers energy consumption.

The building can be enhanced with good lighting and ventilation naturally using appropriate eco-friendly transparent skins on the building. Using LED bulbs can also reduce energy usage.

Assuring a clean and neat environment for the tourists must be the most crucial goal of any museum while incorporating sustainability in its activities. Moreover, renovating an older building instead of constructing a new building to house the museum would be a greener and sustainable option.

Conclusion

In this 21st century, it is no longer enough for the museums to simply serve as an institution to preserve the past and educate the present generations. Its time that the museums take up the role of emphasising and promoting the importance of conserving nature through its green activities to satisfy the responsible tourists. Implementing green practices have the capability to attract not only green tourists but also to educate and convert non-green tourists to take up the responsibility to conserve the environment. It is also the obligation of the Government to engage in necessary steps to execute existing green practices while allocating resources to invent new green practices. Future studies can be done to identify green practices in other forms of tourism like coastal tourism, medical tourism, and adventure tourism.

Tianjin Daxue Xuebao (Ziran Kexue yu Gongcheng Jishu Ban)/
Journal of Tianjin University Science and Technology
ISSN (Online): 0493-2137
E-Publication: Online Open Access
Vol:54 Issue:10:2021
DOI: 10.17605/OSF.IO/TKWS7

References

[1] Lenzen, M., Sun, Y.Y., Faturay, F., Ting, Y., Geschke, A., and Malik, A.2018.The carbon footprint of global tourism. *Nature Climate Change,* 8, 522–528.

[2] Lumley, R.1988. *The Museum Time Machine: Putting Cultures on Display* (1st ed.). Routledge, London.

[3] McLean, F.C.1994. Marketing in museums: A contextual analysis. *Museum management and curatorship,* 12(1), 11-27.

[4] Parasuraman, A., Zeithaml, V., and Berry, L.1988. SERVQUAL: A multi-item scale for measuring consumer perceptions of service quality, *Journal of retailing*, 64(1), 12-40.

[5] Khan, M. 2003. Ecotourists' quality expectations, *Annals of Tourism Research*, 30(1), 109-124

[6] Nunally, J.1978. *Psychometric Theory*. New York: McGraw-Hill

Internet1:https://icom.museum/en/resources/standards-guidelines/museum-definition(03.01.2021)

Internet2:http://www.brainyquote.com/quotes/quotes/b/bobbrown501201.html(05.01. 2020)

Internet3:https://www.museumnext.com/article/museums-and-the-art-of-environmental-sustainability(05. 01. 2021)