

A Progress Evaluation of National Geographic's Geotourism Program

By

Susannah Brouwer

Joel Nystrom

Tammy Stern

Hannah Torres

Dr. Rebecca Vidra, Advisor

Masters project submitted in partial fulfillment of the
Requirements for the Master of Environmental Management degree in
The Nicholas School of the Environment
Duke University

2012

Table of Contents

Abstract	3
Introduction	4
Background of the Study Destinations	6
Purpose of Study and Objectives	10
Study Framework	12
Methods	14
Survey Design	14
Survey Administration	16
Survey Data Analysis	17
Interview Design	18
Interview Administration	20
Interview Analysis	20
Error Structure and Sources of Bias	21
Survey Results	23
Sierra Nevada	23
Crown of the Continent	37
Qualitative Results	48
Sierra Nevada	48
Crown of the Continent	51
Discussion & Recommendations	54
References	64
Appendix A: 2011 Participant Assessment Survey	68
Appendix B: Survey Coding	74
Appendix C: Survey Analysis	80
Appendix D: Interview Questionnaire	89
Appendix E: Complete Survey Results	91
Appendix F: List of Recommendations	109
Appendix G: How to Create an Impact Model	110

Abstract

National Geographic's Geotourism Program is a sustainable tourism initiative designed to ease the negative impacts of mass tourism through a branding opportunity and grassroots structure that empowers local stakeholders to showcase regional and cultural identity. While previous studies on National Geographic's Geotourism Program have investigated the potential and achieved successes from certain perspectives, the Geotourism charter mandates that program evaluation should consider *all* stakeholder interests (Boley 2009, Leonard 2011). This study contributes to a comprehensive evaluation by analyzing progress from a previously unexplored perspective: that of the participating sites in two regions: Sierra Nevada and Crown of the Continent (COTC) region.

Quantitative and qualitative data collection instruments gather information from participating sites that then is evaluated by indicators in three categories: social, environmental and economic. Social impact proves to be the strongest success of the project as participants are encouraged to learn about the assets of their region, and share regional information with visitors. The study also reveals that participants who buy into the Geotourism Project by educating visitors and incorporating it into their business planning documents recognize the greatest degree of project impact. Analysis of the results yields recommendations for how stakeholder education and involvement, impact measurement, and project positioning can be more effectively integrated into each destination's strategic plan.

Introduction

The shift towards sustainable tourism was intended to relieve the undesirable side effects caused by traditional mass tourism. Uneven development, environmental degradation, and negative social and cultural impacts are some of the documented consequences of poorly managed tourism industries (Boley et al 2011, Choi and Sirakaya 2005). Since the 1980s, alternative forms of tourism such as ecotourism, volunteer tourism, agritourism, and geotourism have gained popularity, aiming to improve the quality of life for the host community beyond just economic indicators of new employment and cash income. Sustainable tourism offers locals new skills, expands circles of contacts, and renews cultural pride while offering a high quality experience for the visitor (Boley et al 2011, Stronza 2008). Each form of sustainable tourism is motivated by its own facet of sustainability: community-driven development, minimizing negative social impacts, optimizing economic benefits, long term planning, conservation of resources, and others (Boley 2011). Common to each of these schemes are three simultaneous objectives: ecological viability, economic profitability, and cultural respect (Travel and Tourism 2011). Accomplishing these missions is particularly important today as tourism is anticipated to double between 2007 and 2022 (Budeanu 2007).

National Geographic's Geotourism Program is an initiative to encourage tourism that promotes and protects "the sense of place as a whole" (Boyle 2011). By definition, it is tourism that "sustains or enhances the geographical character of a place—its environment, culture, aesthetics, heritage, and the well-being of its residents" (Dion 2011). The Geotourism Project creates and publishes an internet-based map, called a WebMap, which features businesses, landmarks, events, and other sites that represents the destination's local culture. The WebMap has a printed counterpart, the MapGuide, which features a select number of map sites. The digital and printed maps are "working landscape[s]" of a region; they are described as a cross between a guidebook and a road map (Boley 2011, Bosak et al 2010).

A Geotourism Project goes beyond simply marketing the unique assets of a particular destination. It aims to sustain and enhance the region's identity, stewardship, and economic growth. Though it has the benefit of the National Geographic brand, the Geotourism Project is managed by local project leaders who are advised by a volunteer steering committee called the Geocouncil. This group signs a Geotourism Charter whereby they assume the responsibility of upholding the 13 principles of Geotourism including: enhancing local character, building partnerships, disseminating information, anticipating development pressures, and conserving resources (Dion 2011). The Geocouncil approaches project goals in phases, strengthening its efforts over time. The project is corporate only by brand; it functions with a grassroots structure. In this manner, the all too frequent competition between industrial tourism's demands and the wants of the host community is avoided (McKercher 1993).

The growing number of destinations embracing the Geotourism Project is an indicator of enthusiasm about its mission. However, the task of assessing whether the program is accomplishing its goals is largely subjective, and there is little common framework to examine the socio-economic changes where sustainable tourism has been implemented (Choi and Sirakaya 2006, Tsaur et al 2006, Haber and Reichel 2005). There is an "insufficiency" of empirical assessment of small ventures because there is not a readily accessible single-source indicator such as sales figures, but rather a diffusion of outlets for success including social and environmental impacts (Haber and Reichel 2005, McWilliams and Crompton 1997).

The assessment of National Geographic's Geotourism Project is especially unique because it is implemented and run by local managers at each destination rather than the corporation itself. As a result, performance measures include participants' attitudes and behaviors. This study is a progress evaluation designed to contribute data to the challenging task of evaluating the success of the Geotourism Project. The inquiry is designed to gather information from sites participating in the project in two regions: Sierra Nevada (SN) and Crown of the Continent (COTC).

Background of the Study Destinations

In 1997, National Geographic Society's (NGS) Center for Sustainable Destinations established its definition and promotion of Geotourism. The Geotourism Project was designed to offer select destinations around the world the opportunity to use the NGS brand to promote their region and attract a more sustainably-conscious traveler. For a fee, NGS provides destinations with a platform to increase tourism and stewardship (Dion 2011, NGS 2011).

A local Geotourism alliance is typically the initiating partner in establishing a Geotourism Project in a particular region. This may be a community organization, government body, or private company that is interested in working with National Geographic to promote the unique character of their region. This entity recruits about 6-10 local tourism advocates to form a steering committee and appoints a project manager. This inner circle of stakeholders has a different title in each destination, but for purposes of clarity it will be referred to as the "Geocouncil" in this report. They develop the project's location-specific goals and communicate project status and developments to the surrounding community. The Geocouncil is also responsible for fundraising for the initial National Geographic fee of \$250,000 and for continued project support. Beyond the Geocouncil, a larger group of stakeholders represent the wide variety of regional interests. This "Regional Council" is open to any participant interested in contributing time, expertise, or resources to the project (Leonard 2011). Lastly, the general public is a stakeholder and is called on to submit content and nominations for the features of the website and map.

The Geocouncil works closely with National Geographic staff to create the aforementioned platform for promotion - a highly customized, multi-media website. The first task for a newly organized Geocouncil is to promote public forums that raise awareness about the program. To create website content, they call on the public to select locally representative sites to be evaluated for inclusion on the printed MapGuide or Geotourism WebMap. A "site" includes lodgings, eating and drinking

establishments, community events, farmers' markets, shops, historic sites, museums, scenic drives, parks, natural landscapes, and trails. Anyone may nominate any site through the destination's Geotourism website, and some sites are self-nominated. The Geocouncil creates selection criteria that is used to review and select nominations for the WebMap. Examples of criteria are: meet the Geotourism definition, be legal and safe, have a complete text description, and be located within the bounds of the destination location (SN Selection Criteria). Selecting only Geotourism-like sites promotes sustainable rather than general tourism (Boley 2011).

National Geographic's staff of editors, fact-checkers, web-designers and cartographers creates the Geotourism website and MapGuide from regional information garnered at the forums. Markers on the WebMap represent approved sites, and each has their own link to display business information. The printed MapGuide is a fold-out providing maps, photos, and information about sites on both sides. It also includes the definition of Geotourism, quotes from business owners about the region, and behavioral sustainability tips (Boley 2011). In the early stages of National Geographic's Geotourism program, this was the main deliverable (Leonard 2011). Now, there is a stronger focus on the website though paper maps are still being produced and distributed by the program manager to tourism bureaus and participating businesses. Once the program is in place, National Geographic passes on all operational responsibility to the Geocouncil and program manager, though it maintains ownership of the website.

The purpose of the website is twofold: it is a marketing tool showcasing assets of a destination, and an online forum for community building. The Geocouncil continues accepting nominations for the WebMap, constantly updating the display of what a destination has to offer. The Geocouncil also updates information on important local topics and maintains online forums about sustainability practices. Below are more specific background details about the two destinations selected for analysis in this report: Sierra Nevada and Crown of the Continent.

Sierra Nevada

The Sierra Nevada (SN) Geotourism Project spans California and Nevada from just north of Modoc National Forest to just south of Bakersfield, California, with one of the central attractions being Yosemite National Park. The project was initiated in 2009 when Steve Frisch, president of Sierra Business Council, contacted National Geographic Society after hearing about other MapGuide projects like the one at Crown of the Continent. Because he felt the Sierra Nevada was also a special cultural, historic, and aesthetically beautiful destination, he decided to adopt the project, and chose Nicole DeJonghe to be the project manager. While a full-time Geotourism project manager heads the COTC project, here DeJonghe manages the project as well as four other unrelated projects (DeJonghe 2011).

Because of the massive size of the Sierra Nevada region, this project was implemented in 4 phases. First, the Yosemite Gateways sub-region created its own Geotourism Alliance, followed by the Tahoe Emigrant, the Southern Sierra region, and the Sierra Cascade region (Kamansky et al 2011). Overall, nominations and website development lasted from August 2009 to mid-2011. After all of the sub-regions established the projects in their areas, they were dissolved, and some members who were willing and able became part of the Sierra Nevada-wide Geocouncil, covering the entire area (DeJonghe 2011). Funding for the Sierra Nevada project comes from a number of sources, including Sierra Nevada Conservancy Funding, Morgan Family Foundation Grants, Federal Highways Administration Scenic Byways Grant, and US Forest Service (Sierra Nevada Geotourism Website 2012).

Currently the Sierra Nevada on-line MapGuide has approximately 1,237 active sites and is still expanding. There may be up to 20 new nominations per week at times of extensive outreach events (DeJonghe 2011). One of the main goals in SN is to relieve pressure on nearby major tourist attractions like Yosemite National Park and Lake Tahoe by attracting visitors to stay in and explore surrounding communities. The Geocouncil also aims to incorporate new technologies including a Geotourism Smartphone App (Kamansky et al 2011).

Crown of the Continent

The Crown of the Continent (COTC) Geotourism MapGuide was the fourth MapGuide project to be added to National Geographic's program (National Geographic 2008). The process began for COTC when National Geographic's Center for Sustainable Destinations reached out to regional groups to begin the formation of a Geocouncil. In 2007 the group formed, comprised of "communities, tourism bureaus, conservation and business groups, educators, First Nations, government agencies, and others" (Johnson 2011). The project was officially launched on March 29, 2008, when the public site nomination process began. The Geotourism Council then reviewed nominations and selected which sites would be included on the printed MapGuide. Only the top 150 nominations were selected for the MapGuide, but the WebMap included many more.

While there is a fee required for a region to be named a Geotourism destination, there are no additional fees for individual sites that appear on the map. In this case, the Crown of the Continent Geotourism Office paid the fee with funding raised from major donors like the Yellowstone Business Partnership and the USDA Rural Business Opportunity Grant.

The Crown of the Continent Geotourism Council is fully operational with a full-time project coordinator, Dylan Boyle, who works under the Montana Tourism Industry. The COTC project is special in that it spans national borders including areas of southwest Alberta, southeast British Columbia, and Montana. With Waterton-Glacier International Peace Park at its center, the region includes approximately 10 million acres of land where the Rocky Mountains intersect the US-Canada border (Leonard 2011). It now includes over 550 active sites on its on-line map, and continues to grow at about 10 new nominations each week (Boyle 2011). According to Boyle, the following statement depicts the region's vision and goals for involvement in the project:

"The Crown of the Continent Geotourism Council celebrates our region's exceptional environment, culture and heritage. Our trans-boundary partnership provides opportunities for visitors and residents to learn, to experience and to enjoy while contributing to regional wellbeing. We pursue cooperative projects and encourage

sustainable businesses through Geotourism activities, including stewardship, education and regional promotion.”

The COTC Geotourism Council is pursuing, among other things, business development projects with a focus on sustainable operations and marketing (Boyle 2011).

Purpose of Study and Objectives

The Geotourism Charter outlines the overall mission and vision of Geotourism and is the foundation for each Geotourism Project. One of the tenets of the Charter mandates destinations to “establish an evaluation process to be conducted on a regular basis by an independent panel representing all stakeholder interests, and publicize evaluation results” (NGS n.d.). National Geographic does not include an evaluation system as part of their programming for each destination. Locally, SN and COTC currently have no formal evaluation processes in place for the Geotourism Project in their region. Therefore, this study is designed to gather baseline data and establish instruments and practices that can be combined with other methodology to produce a more comprehensive evaluation system for both destinations.

This study is preceded by the research of Sheena Johnson (2008), Bertram Boley (2009), Dylan Boyle (2010) and Kristen Leonard (2011). Johnson, then a PhD candidate from the University of Calgary, interviewed Geocouncil members during the development of the COTC MapGuide to produce a framework of ten indicators that could be used to gauge long-term project success (Leonard 2011). Boley (2009) and Boyle (2010), on the other hand, worked to conduct research about the nature of “geotourists”. They explored the tendencies and values of these travelers in the COTC region and in other parts of Montana. Leonard’s (2011) research refined the indicators developed in Johnson’s work and used them to develop three tools for measuring the success of Geotourism projects in different destinations. Leonard’s tools consisted of a Stewardship Council Assessment, a Program Sustainability

Assessment, and a Web User Survey. Leonard's research was based on the involvement of Geocouncil members from five current domestic projects and National Geographic Society staff.

The purpose of this study is to add another useful tool to complement those developed in the studies described above in order to capture the perspective of sites participating in the Geotourism project – a perspective that has not yet been studied. Our participant perspective assessment tool, which consists of our survey and interview data collection instruments, is valuable to the overall evaluation of Geotourism because of the influence participants have on Geotourism, and vice-versa. Participating sites influence Geotourism through social interactions with visitors; they are the front line for opportunities to provide visitors with information about the project and the culture of the region. Additionally, they have the power to encourage travelers to respect, revisit, and recommend a destination (Tsauro 2006). Conversely, Geotourism influences participating sites through National Geographic branding, a greater online presence, and by providing a local networking platform. Geotourism has the potential to not only increase visitor traffic and spending, but also to attract environmentally conscious visitors who value sustainability.

The inquiry in this study is framed around the following primary research question: *What are the impacts of National Geographic's Geotourism Project on participating sites in the Sierra Nevada and Crown of the Continent destinations?* Secondary questions include:

- How are social, environmental, and economic impacts perceived by participating sites?
- What are the factors that influence a positive perception of project impact?
- Which sites are informed participants and why?
- Which sites are tracking project impact?
- What are the methodologies of the sites that are currently tracking project impact?

The study approach is four-fold: (1) **Design and Pilot** a baseline survey instrument that can be continually administered by SN and COTC and serve as a model for other destination Geocouncils,(2) **Conduct** case study interviews to complement survey results with open-form testimonials,(3) **Determine** factors that influence the social, environmental and economic impacts of the Geotourism project based on data collected via survey responses and case interviews, and (4) **Identify** recommendations to maximize project impact in the SN and COTC regions.

The methods used to achieve the first two objectives - designing a baseline survey instrument and conducting case study interviews - are detailed in the following section. Key findings are then presented, followed by data analysis and discussion sections. Finally, conclusions and recommendations are drawn from the survey and case study results and analyses.

Study Framework

This study is a formative evaluation of project impact. To embed it in the context of previous research and inform methodology, a literature review was conducted on program evaluation studies, impact analyses, and other research methods. In an evaluation study, information about the activities, characteristics, and outcomes of a program is systematically collected and scrutinized to determine the impact of a program, demonstrate accountability and success to decision makers, improve program effectiveness, and/or inform decisions about future programming (Marynowski 2006, UNFPA 2004). The National Science Foundation (2002) defines two major types or stages of evaluation: formative and summative. The purpose of formative evaluation is to assess initial and ongoing project activities, while summative evaluation is used to assess the quality and impact of a fully implemented project. Progress evaluation, a type of formative evaluation, collects information to determine what the impact of the activities and strategies is on participants or institutions at various stages of the program (NSF 2002).

Based on the above definition, this study is closely related to progress evaluation, with a focus on measuring and understanding perceived impact on Geotourism project participants.

The methodology of this study differs from other forms of impact analyses, such as a purely environmental or economic impact analysis. Environmental impact assessments determine the impact of a proposed action on the biophysical environment, although it can include changes to social, cultural, and economic systems as well. Economic impact analyses utilize research methods such as visitor spending surveys, analysis of secondary data from government sources, and input-output models (Stynes 1999). While visitor spending surveys appear to be commonly used tools when measuring economic impact on tourism destinations, they are not used in this study due to time and resource limitations and lack of access to pre-existing data (Driml and McLennan 2010). Instead, this study gathers data about perceptions of impact based on survey and interview results.

This study uses a mixed method approach to evaluating impact, incorporating both surveys and in-depth interviews as primary tools. The survey gathered quantitative and qualitative data on specific questions from a large number of stakeholders, while the interviews added significant depth to understanding participant perspectives. The quantitative and qualitative data from the survey, in conjunction with the interviews and the initial literature review, provided three perspectives used to cross-examine results.

Best practices for survey design and implementation were used, as well as for in-depth interviews. Overall, this study follows the four basic steps outlined by Estrella and Gaventa (1998): (1) planning, (2) gathering data, (3) data analysis, and (4) documentation, reporting, and sharing of information. Since our progress evaluation is being conducted on two projects in various stages of development, these four steps are duplicated and repeated for each destination.

Methods

Sites represented on the COTC and SN WebMaps were invited to participate in the 2011 Participant Assessment Survey to share their knowledge and understanding about program impacts. Interviews with six sites, three in each destination, were conducted to better interpret the results of the survey and examine impact on a finer scale. The literature review provided background information on the Geotourism project including preceding evaluation tools and data gathered for both visitor and Geocouncil perceptions of impact. It also identified key indicators for assessing social, environmental and economic impact and informed the development of the 2011 Participant Assessment survey instrument.

Survey Design

Survey Sample

The 2011 Participant Assessment Survey targets businesses, museums, outfitters, guides and other organizations that are the featured sites on the Geotourism WebMap or printed MapGuide. The goals of the survey were threefold: (1) to recognize if and how organizations experience project impacts, (2) to understand if and how organizations are currently tracking project impact, and (3) to inform recommendations to enhance project impact in both destinations. The initial survey distribution lists were provided by Dylan Boyle, Crown of the Continent Geotourism Coordinator and Nicole DeJonghe, Senior Program Director, Sierra Nevada Business Council. The lists were derived from an active content database meaning that for each site the nomination has been completed, the Geocouncil and Web Editor and NGS have reviewed it and it has been selected to be featured on the WebMap. The active content database includes contact information from anyone who has submitted information about a site. Active content data also contains contact details for non-commercial sites such as hiking trails and many listings lacked current email addresses. Data sets for both destinations were filtered to eliminate

non-owner/operator listings. Missing contact data was gathered through online research and duplicate emails were removed. The resulting lists included 1151 sites with available email addresses out of a total of over 1,237 for the Sierra Nevada and 307 out of over 550 for the Crown of the Continent (DeJonghe 2011, Boyle 2011).

Period of Study

The survey planning, design, and implementation took place from October 2011 to December 2011. The survey opened on December 1, 2011 and closed on December 20, 2011.

Survey Type

Participating sites' data were collected using a web-based questionnaire created through the survey host, Qualtrics (Qualtrics Labs Inc., Provo, UT). Utilizing web-based methods to administer the survey increased the speed and cost-effectiveness of distributing the instrument. The reporting form included 16 open and close-ended questions for Sierra Nevada and 17 for Crown of the Continent with the inclusion of an additional question related to financial tracking processes. The questions collected nominal, ordinal, and Likert-scale responses and were divided into five main categories: (1) demographic and informational, (2) social impact, (3) environmental impact, (4) economic impact, and (5) overall impact. See Appendix A for a copy of the 2011 Participant Assessment Survey.

Survey Research and Review

Leonard's 2011 Stewardship Council Assessment and Web User Survey provided the foundation for the Participant Assessment Survey used in this study. The new instrument includes questions from both of Leonard's tools. However, it is re-structured to specifically target sites participating in the project and featured on the WebMap and printed MapGuide. This survey used Leonard's broad questions to create more region-specific and detailed inquiries to facilitate a more discerning data analysis. It also incorporates new questions to provide additional impact-related information such as degree of project integration and financial tracking.

In the survey, a series of questions addressing social, environmental and economic impact was followed by two final questions targeting overall impact and soliciting additional project feedback. Each question in the instrument is supported by previous research such as the measures of success outlined in Leonard's 2011 report. The questions are also informed by the Geotourism guidelines and principles outlined in the Geotourism Charter. For example, the first question related to social impact addresses the promotion of regional identity and collaboration, a key tenet of National Geographic's Geotourism Charter. In addition, questions were designed to target the specific project goals of each destination such as Sierra Nevada's stated objectives to empower community members and establish a regional brand and Crown of the Continent's mission to increase visibility and expand networks (Leonard 2011).

Expert Review

Upon completion of the initial design of the 2011 Participant Assessment Survey, the instrument underwent three rounds of review with key stakeholders: Dylan Boyle from the Crown of the Continent Geotourism Project and Nicole DeJonghe from the Sierra Nevada Business Council. In addition, Jim Dion, Business Development Associate for National Geographic Maps, Dr. Pamela George, adjunct Professor of Environmental Sciences and Policy at Duke University and Dr. Rebecca Vidra, Duke Faculty and Master Project Advisor for the Nicholas School of the Environment at Duke University also participated in the first round of survey review. Finally, Dr. Randy Kramer, Professor of Environmental Economics at Duke University and a world-renowned survey design authority, assessed the survey. All expert review highlighted the need to clarify word choice, re-format and eliminate questions, and re-organize survey structure. Integrating these recommendations produced a final survey that was more targeted and comprehensible.

Survey Administration

Dylan Boyle from COTC and Nicole DeJonghe from SN distributed the web survey to sites in their region via their "constant contact" online communication vehicles. The COTC has an email list serve and

SN has a web newsletter. On November 30th they sent an introductory email to notify recipients that they would have the opportunity to participate in an impact survey for the Geotourism Project in their region. The official email announcement including a link to the 2011 Participant Assessment survey on Qualtrics was sent on December 1st. The Qualtrics account was accessed and managed exclusively by the Master's Project team, and COTC and SN managed all email outreach and follow-up. Sierra Nevada tracked response rates, click-through data and bounce backs. A follow up email was sent on December 7th to remind non-respondents to complete the survey. A final reminder and thank you message was sent on December 15th. The survey was held open five more days to give any remaining non-respondents a chance to complete the survey.

Survey Data Analysis

Survey responses were coded for analysis according to the system outlined in Appendix B. The procedure for quantitative analysis was identical for both SN and COTC. Descriptive statistics were used to determine the relevant measures of central tendency for demographic and general informational results as well as social, environmental, economic and overall findings.

Chi-square and Fisher's exact tests were run to determine whether the observed frequencies in the data differed significantly from the frequencies expected by chance. In other words, the tests revealed significant relationships between variables. The Fisher's exact test is interpreted the same as the chi-square test, but is used when there is a lower frequency of overlap between variables. For the purposes of this analysis, chi-square and Fisher's exact are treated the same. Using the findings from the chi-square and Fisher's exact test, an ordered logistic regression was conducted to explain differing levels of impact and to determine significance, directionality, and intensity of relationships between variables. The ordered logistic regression was chosen because the response variables in question were solely ordinal-level variables, and it was necessary to hold other explanatory variables constant in the

data analysis. Included in the regression were variables found to have a significant relationships from the chi-square and Fisher's exact tests, as well as any control variables or variables deemed to have theoretical explanatory power. Dr. Elizabeth Albright, Visiting Assistant Professor at Duke University's Nicholas School of the Environment, and Duke students in the fields of statistics and survey analysis were consulted to determine the appropriate statistical tests for analyzing results. The complete findings from the regression analyses are reported in Appendix C.

Interview Design

The first step in developing the interview questionnaire was to conduct a literature review of previous studies addressing the social, environmental, and economic impact of sustainable business operations. This was important to determine potential indicators of these types of impacts as seen in businesses similar to those which participate in Geotourism. Additionally, reports about small and medium enterprises (SMEs) that have begun sustainability programs, as well as success stories published by the Council for Smaller Enterprises, were used to identify potential impact of Geotourism on participating businesses (AICPA 2011, COSE 2011).

The first round of interview questions generated from the literature review was compared to the questions that had already been compiled and vetted for the survey. While the interview questionnaire asked open-ended questions to encourage anecdotes, the wording and structure were similar to the survey questions to encourage respondents to elaborate on answers they had already provided for the survey. This strategy was designed to provide information around the same inquiries so that it could be used for triangulation of results.

While the SN and COTC projects have aligned missions, each of their priorities for implementing the Geotourism Projects is distinct. To learn more about the goals of each of these destinations, informal interviews were conducted with Dylan Boyle, Crown of the Continent Geotourism Coordinator,

and Nicole DeJonghe, Senior Program Director of the Sierra Nevada Business Council. Information collected during these interviews was used to develop site-specific evaluation indicators. Based on these conversations, two additional questions were added to the Crown of the Continent interview questionnaire: one about involvement in formal or informal business development workshops and another about participation in local roundtable and conservation forums. The updated questionnaire was reviewed and approved for implementation by Boyle and DeJonghe. See Appendix D for a copy of the 2011 Geotourism Project interview questions.

Interviewees included both recommended and randomly selected sites from the MapGuide. For the recommended sites, Boyle and DeJonghe were asked to provide the names of organizations that had been active participants in the Geotourism Project throughout the duration of its implementation at each destination. The objective was to explore why these organizations chose to actively participate in the project and what details they could provide about the impact of the Geotourism Project. After contacting the recommended sites, two from each destination were selected based on their availability to meet the interview timeline.

One random site per destination was also interviewed to gain a broader, less biased perspective of the project. These randomly selected interviewees were drawn from a contact list, provided by the SN and COTC project managers, of all participating sites in the Geotourism Projects in their region. The lists were edited to remove duplicate entries, and each site was assigned a numeric ID. Ten random numbers per destination were generated using an excel program function. These numbers were matched to the assigned site IDs, which produced a list of 10 potential businesses for in-depth interviews at each destination. All sites were contacted with a request for interview, and after one week the site that (1) responded and agreed to be interviewed and (2) had the ID number that was randomly selected first, was interviewed.

Interview Administration

The interview process was identical for the recommended and random sites. Interviews were requested for the week of December 12th-16th, or the week of January 3rd-6th. Interviews were conducted over the phone due to lack of travel funding for in-person interviews, as well as lack of high-speed internet capability for many of the selected sites. Interviews were conducted by a single interviewer along with one note-taker to record responses. Questions were sent in advance via email to provide participants an opportunity to plan answers. The interviewer began with an introduction, explaining the purpose of the project and informing the participant about how the interview process would be conducted. After interviewees briefly introduced their organizations, the interviewer implemented the questionnaire. Each interview lasted approximately 30 minutes.

Interview Analysis

Interview notes were analyzed for indicators of environmental, economic, and social impact. The approach to this qualitative analysis was through “coding” or finding themes within the text. Because of the limited number and short length of the interviews, interview data was coded by hand rather than computer-aided software. Themes relevant to the above-listed three indicators were identified and extracted from the interview notes, then analyzed according to positive, neutral, or negative.

Written answers to the open-ended survey question which asked participants for additional comments about the Geotourism project were also codified. Again, social, environmental economic themes were also identified and analyzed positive, negative, or neutral.

Error Structure and Sources of Bias

To better understand the implications of the study results and ensure credibility, potential sources of bias and error in the research process are considered. Specifically the following aspects of survey and interview design, data collection, and interpretation are identified:

- The survey introduction paragraph informing participants that the project was being conducted by Master's students at Duke may have introduced voluntary response bias from respondents who are current or previous graduate students or who may have preconceived notions about Duke, either positive or negative.
- Individuals that feel strongly about Geotourism may be more likely to respond to a survey about the project than others. No incentives, which may have neutralized this bias, were offered to participants.
- The convenience sample drawn from the SN and COTC distribution lists most likely resulted in under-coverage bias.
- The online administration of the survey may have precluded people with no web access or limited internet connections from participating in the survey, resulting in non-response bias. Non-response bias may also have been introduced by technical issues with the importation of the excel data sheet into the survey distribution email program which resulted in several (exact quantity unknown) addresses not receiving the initial survey announcement. Subsequent emails which were successfully sent to all 307 contacts referred to the initial email and may have caused confusion, limiting potential sample size.
- Measurement error may have occurred due to structuring questions related to overall impact and general feedback at the end of the survey when survey participants are vulnerable to

response fatigue. In addition one respondent completed the survey twice and it was impossible to eliminate the duplicate response. Other flaws that may have introduced measurement error include survey question wording that may have been unclear and confusing or produced a forced response.

- Due to technical limitations and respondent preferences, interviews were not recorded and transcribed, but rather conducted with a third-party note-taker. While this methodology can alleviate some measurement error, recordings and transcriptions provide the most accurate data for analysis.
- The Geotourism Project involves a relationship between small business stakeholders and a major corporation, which may result in social desirability bias for both survey and interview responses. Although it was made clear that the study was a university research project, it cannot be ruled out that some participants may have skewed responses in hopes of receiving benefits from National Geographic.
- Restriction of interviews to conference calls versus in person meetings may be another source of bias. Face-to-face interviews potentially yield better quality data (Knox 2009). However, phone interviews may reduce social desirability bias.
- While it was important to interview participating sites with enough history and involvement with the Geotourism Project to provide useful data, non-random selection of some sites based on recommendations from invested parties may have introduced significant sampling bias.
- Use of the random number generator to create an additional pool of interviewees reduced some sampling error. However, self-selection bias still exists because organizations chose to respond or not respond to the interview request.

- Incomplete recollection is another source of interview bias. Interview questions were sent in advance to give sites time to consider responses. In addition follow up emails were sent to encourage replies with any additional comments after the conclusion of the interviews. However, most sites did not review the questions in advance and none responded with additional thoughts post-interview.
- Finally, we also acknowledge potential errors in the inferences drawn from our survey results. Controlling for all variables that influence a participant's perception of impact is difficult (if not impossible) in this type of study, and we thus acknowledge these shortcomings in data control and inferential understanding. Perceived impact and actual impact may be different no matter how well a study is crafted, implemented, and interpreted. Perception and attitude surveys of residents may reveal discrepancies between "actual" impact and "perceived" impact." (Belisle & Hoy 1980). The word "impact" itself can allude to positive or negative consequences and the survey did not constrain the word to either meaning.

Survey Results

Sierra Nevada

The results of the 2011 Participant Assessment Survey are generated from 213 responses recorded prior to December 20, 2011. The survey opportunity was sent to 1151 sites and just over 20.5% responded (n = 236), but results were calculated only for respondents who answered 5 or more of the 16 survey questions (n = 213). See Appendix E for results to each question on the 2011 survey.

Questions designed to gather demographic and contextual data provided information about sites' industry type and legal status. Most respondents (17%) provide accommodations to travelers (Figure 1). Additionally, non-profits are the most common (45%) organizational type (Figure 2).

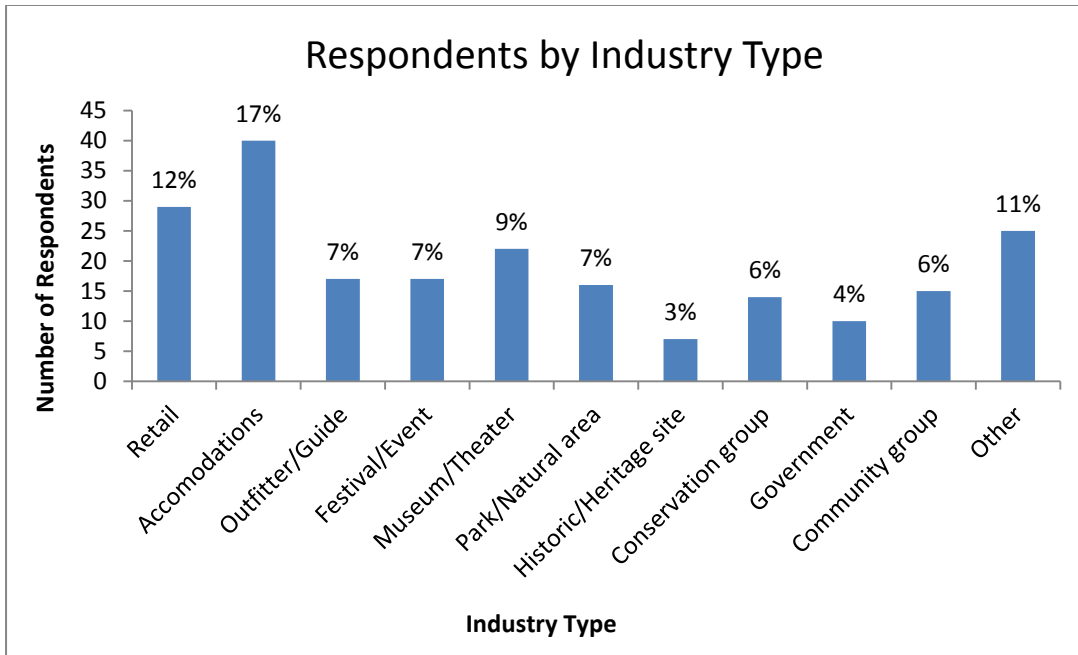


Figure 1: Sierra Nevada sites by industry type

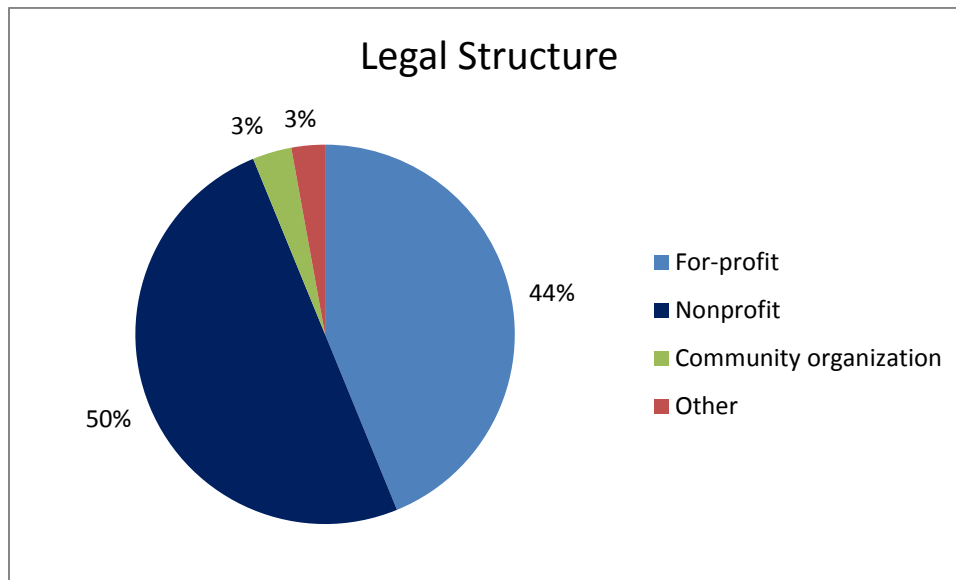


Figure 2: Sierra Nevada sites by legal structure

When asked how they were connected to the Geotourism Project, most survey respondents (65%) indicated that they are featured on the Sierra Nevada Geotourism website or the printed MapGuide. Of the remaining respondents, 20% indicated that they were not aware of their connection

to the Geotourism Project and 15% reported that they are associated with the project in some other way. Respondents also reported on their strategies for promoting their involvement in the Geotourism Project. Of the respondents that do advertise participation in the Geotourism Project, word of mouth and website marketing are the most common channels utilized by 69% of respondents. Display of brochures, flyers and MapGuides is a less prevalent tactic implemented by only 22% of respondents. Advertising through other methods was reported by 15% of respondents and 38% do not advertise any involvement in the Geotourism Project.

Social Impact

A series of questions asked respondents about three aspects of social impact: regional identity and collaboration, visitor education, and partnership development. First, respondents were asked to rate whether the Geotourism Project had *increased* five aspects of regional identity and collaboration using a Likert scale with response categories ranging from *a great deal* to *not at all* (Figure 3 below). There was also an answer choice labeled "I don't know." The mean responses ranged from 1.7 for an increase in a feeling of pride in the region to 2.1 for an increase in an understanding of the culture of the region. Of the respondents that knew whether the Geotourism Project had any influence on these factors, 45% observed somewhat of an increase in all five aspects of regional identity and collaboration as a result of the Geotourism Project. However, overall the largest portion of respondents (35%) indicated that they did not know whether or how the Geotourism Project had influenced regional identity and collaboration.

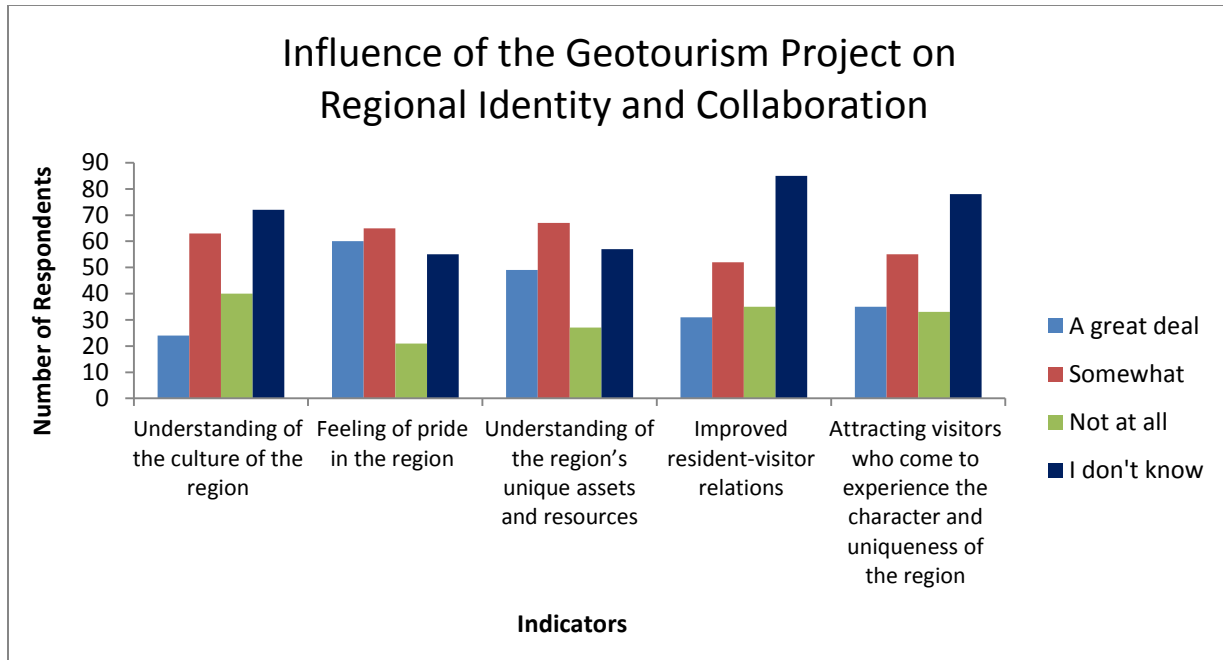


Figure 3: Influence of Geotourism Project on indicators of regional identity and collaboration in the SN region

Next, respondents were asked to indicate the impact of the Geotourism Project on visitor education initiatives. Most respondents (75%) reported that their operations already include visitor education initiatives and the Geotourism project had no impact on these efforts. The remaining 25% reported that they had started or increased visitor education as a direct result of the Geotourism project. Finally, participants were asked whether their involvement in the Geotourism Project had generated any new or improved business partnerships. As indicated in Figure 4 below, more than 40% of respondents reported increased collaboration with visitor bureaus and information centers as well as other local businesses. Respondents also reported significantly increased partnerships and communication with chambers of commerce, historical societies and community groups.

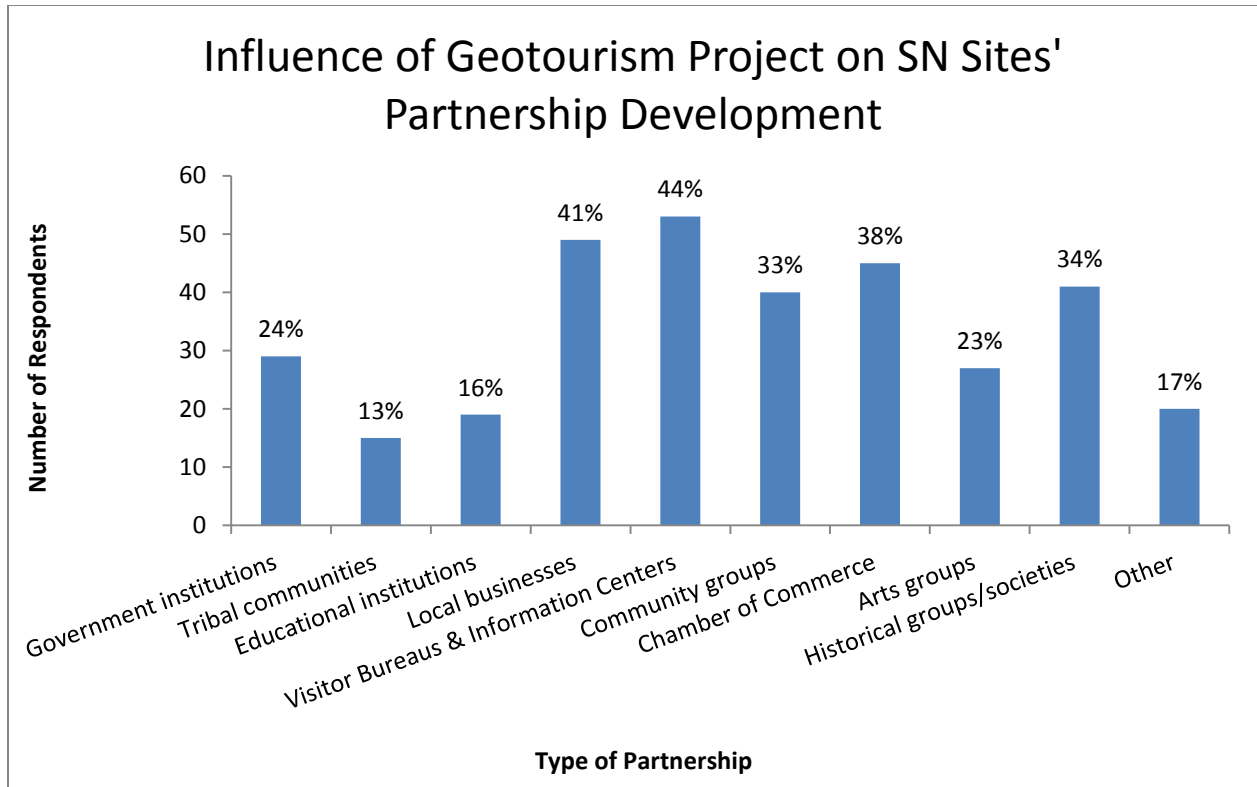


Figure 4: Effect of Geotourism Project on Sierra Nevada sites' partnership development

Chi-square tests and Fisher's exact tests were used to analyze relationships between measures of regional identity and collaboration and other variables discussed in the survey such as legal structure and sustainability practices. Both tests show a large number of significant relationships among these variables (Table 1). Each aspect of regional identity and collaboration has at least two significant relationships with other variables, many at the .01 level of significance. Interestingly, the legal structure of an organization was not related to any aspects of regional identity and collaboration. The same was true for stewardship activities as a result of Geotourism. Meanwhile, visitor education resulting from respondents' involvement in the Geotourism project was found to have very significant relationships with all explored aspects of regional identity and collaboration.

Table 1: Question 4, chi-square and Fisher's exact results – Sierra Nevada

	Question 4				
	Understanding of region's culture	Feeling of pride in the region	Understanding of region's unique assets	Improved resident-visitor relations	Attracting Geotourism visitors
Legal structure (Q2)	--	--	--	--	--
Awareness of involvement (Q3)	.018*	.048*	--	--	--
Education of visitors (Q5)	.016*	.008**	.009**	.011*	--
Education as a result of Geotourism (Q6)	.000**	.000**	.008**	.000**	.011*
Advertise participation (Q7)	--	.045*	--	.002**	--
Sustainability practices (Q9)	--	--	--	--	.001**
Stewardship practices (Q10)	--	--	--	--	--
Incorporation into planning documents (Q14)	.002**	--	--	.025*	.004**

*=p-value is significant at the .05 level; **= p-value is significant at the .01 level.

Ordered logistic regressions were run for each aspect of regional identity and collaboration:

understanding of the culture of the region, feeling of pride in the region, understanding of the region's unique assets and resources, improved resident-visitor relations, and attracting visitors who come to experience the character and uniqueness of the region. The results show that certain variables have clear explanatory power for these indicators of social impact. Respondents' involvement in visitor education explained variation in all five aspects of regional identity and collaboration. Specifically, holding all other variables constant, *if an organization increases visitor education as a result of their involvement in the Geotourism Project, then that organization will also report:*

- A **higher** amount of understanding of the culture of the region
- A **higher** amount of feeling of pride in the region
- A **higher** amount of understanding of the region's unique assets and resources

- A **higher** amount of improvement in resident-visitor relations
- A **higher** attraction of visitors who come to experience the character and uniqueness of the region.

Two other variables also provide explanatory power for several impact indicators. Compared to the organizations who implement sustainability practices as a result of their involvement in the Geotourism project, those sites that have already implemented sustainability practices independently will report a **lower** amount of understanding of the culture of the region, and a **lower** attraction of visitors who come to experience the character and uniqueness of the region. Likewise, compared to organizations that do not integrate Geotourism goals into their planning documents, organizations that have integrated Geotourism goals will report a **higher** amount of understanding of the culture of the region, and a **higher** attraction of visitors who come to experience the character and uniqueness of the region. Other variables included in the regressions, while having significant relationships using the chi-square and Fisher's exact test, were found to have no explanatory power over variations in regional identity and collaboration indicators.

Environmental Impact

Another series of questions targeted the environmental impact of the Geotourism Project by exploring sites' involvement in three categories of sustainability activities: promoting responsible tourism, deepening visitor connections and experience with the Sierra Nevada region, and increasing opportunities for visitors to participate in Sierra stewardship and volunteerism. When asked about sustainable business practices, the majority (65%) of respondents indicated that they are already implementing strategies to improve the sustainability of their organizations and these initiatives are not a result of the Geotourism Project (Figure 5). Of the respondents that did report implementing new initiatives because of the Geotourism Project, reducing waste (10%) and purchasing local products and

supplies (16%) were the most common activities pursued. Fourteen percent of survey respondents reported that they do not engage in any kind of sustainable business practices.

Survey participants were also asked about their involvement in Sierra Nevada regional stewardship activities ranging from in-kind donations to Board membership for environmental organizations (Figure 6). Similar to the implementation of sustainable business practices, most respondents (56%) indicated that they are already actively engaged in stewardship activities and these efforts are not a result of the Geotourism Project. Of the respondents that did engage in stewardship activities because of the Geotourism Project, the most common initiatives pursued were dedicating volunteer time or forming partnerships with environmental organizations (26% of respondents). Twenty four percent of all respondents indicated that they do not participate in stewardship activities of any sort.

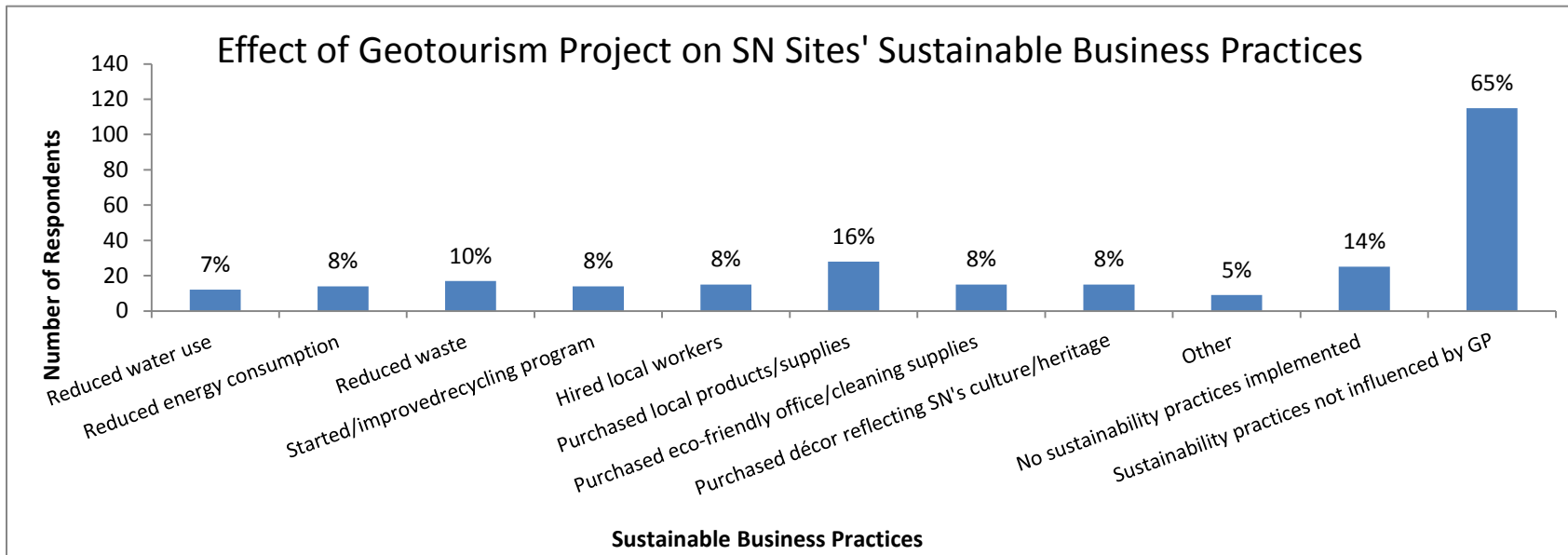


Figure 5: Effect of Geotourism Project on sustainable business practices at Sierra Nevada sites

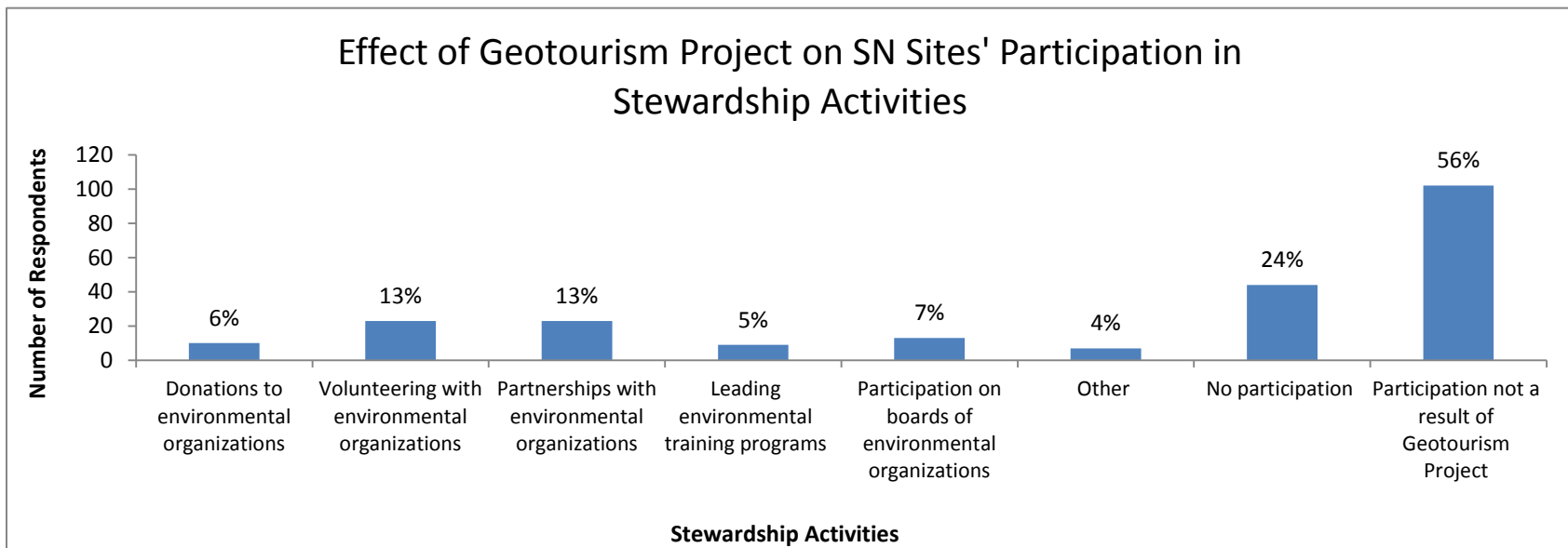


Figure 6: Effect of Geotourism Project on Sierra Nevada sites' participation in stewardship activities

Economic Impact

The last series of questions explored the Geotourism Project’s contribution to Sierra Nevada’s regional economy by gathering information related to visitor behavior, financial tracking and project integration into strategic planning. First, respondents were asked to rate whether the Geotourism Project had increased five distinct aspects of visitor dynamics using a Likert scale ranging from *a great deal* to *not at all* (Figure 7). Coding of responses ranged from “1” for a great deal to “3” for not at all. There was also an answer choice labeled “I don’t know”. Of the respondents that knew of the influence of Geotourism on these factors, 55% did not perceive an increase in any aspect of visitor dynamics as a result of the Geotourism Project. Of those that did, the majority observed a growth in the number of visitors followed by referral and repeat visitors. Overall, the largest proportion of respondents (56%) indicated that they did not know whether or how the Geotourism Project influenced visitor behavior.

Next, respondents were asked about the impact of the Geotourism Project on financial performance. Only 2% of survey respondents have identified revenue that can be specifically attributed to the Geotourism Project.

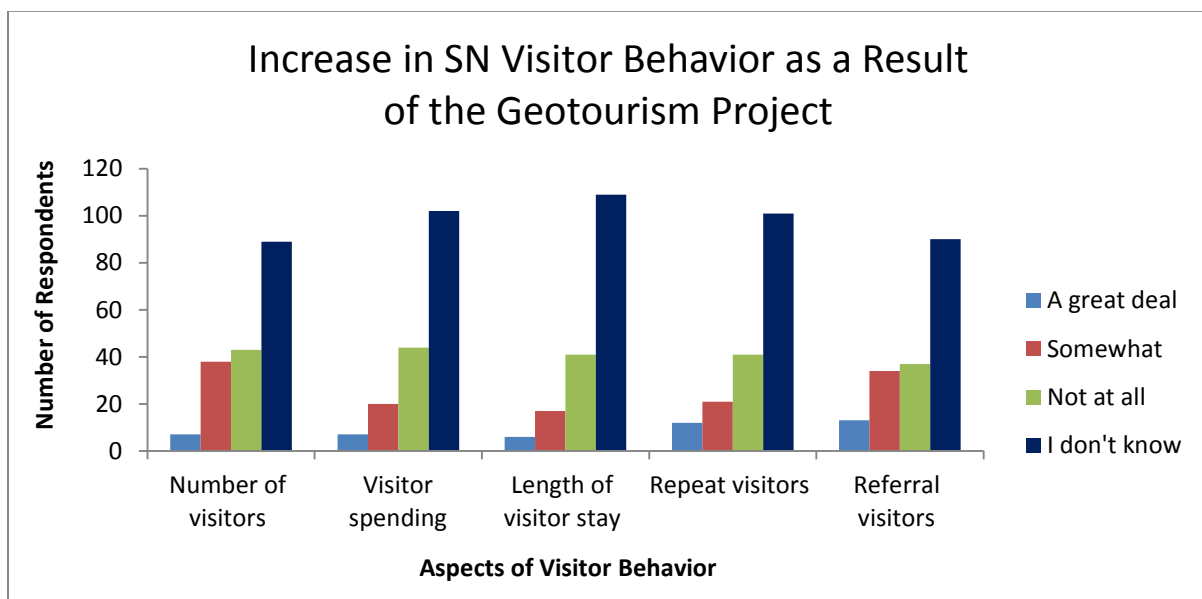


Figure 7: Increase in Sierra Nevada visitor behavior as a result of the Geotourism Project

Finally, respondents reported on whether they had incorporated the Geotourism Project goals into any of their planning or organizational documents. As Figure 8 below indicates, 57% of respondents don't have organizational documents created or haven't edited these materials to include Geotourism principles. If respondents do incorporate tenets of Geotourism into planning documents, it is most often in their marketing plan (29%) and organizational mission, vision and values (20%).



Figure 8: Incorporation of Geotourism goals into Sierra Nevada sites' organizational documents

Similar to social impact, visitor education implemented as a result of respondents' participation in the Geotourism Project was significantly related to every aspect of economic impact explored in this study (Table 2). Incorporation of Geotourism goals into an organization's planning documents and engagement in sustainability practices as a result of the Geotourism Project were also significantly related to the various indicators of economic impact. In addition, legal structure and implementation of sustainability and stewardship practices had significant relationships with these indicators. However, whether an organization advertised participation in the Geotourism Project had only one significant

relationship to economic impact – repeat visitors. Similarly, participant awareness of a connection to the Geotourism Project was only significantly related to visitor spending.

Table 2: Question 11, chi-square and Fisher’s exact results – Sierra Nevada. (Only significant results reported).

	Question 11						
	Number of visitors	Visitor spending	Length of visitor stay	Repeat visitors	Referral visitors	Visitors who found org. on map	Visitors who found org. on website
Legal structure (Q2)	--	--	--	--	--	For-profit: .004**	For-profit: .003** Gov't: .012*
Awareness of involvement (Q3)	--	.048*	--	--	--	--	--
Education of visitors (Q5)	--	--	--	--	--	--	--
Education as a result of Geotourism (Q6)	.000**	.010**	.006**	.000**	.000**	.059*	.002**
Advertise participation (Q7)	--	--	--	.011*	.055	--	--
Sustainability practices (Q9)	.019*	--	.038*	.036*	.012*	--	--
Stewardship practices (Q10)	.026*	--	.032*	--	--	--	--
Incorporation into planning documents (Q14)	.014*	--	.051	--	.041*	--	.014*

*=p-value is significant at the .05 level; **= p-value is significant at the .01 level.

The results of the ordered logistic regressions showed similar findings to the chi-square and Fisher’s exact tests. Increased visitor education as a result of involvement in the Geotourism project had the highest frequency of significant explanatory power. Holding all other variables constant, *if the Geotourism project motivates an organization to increase visitor education, that organization will report:*

- A **higher** increase in number of visitors
- A **higher** increase in visitor spending
- A **higher** increase in referral visitors

Also important in these regressions were legal status of the organization, and whether an organization has incorporated Geotourism goals into their planning documents. For-profit organizations reported a

lower increase in the number of visitors who found them in the printed Geotourism map than other types of organizations, all other variables held constant. The length of visitor stay and repeat visitor questions were found to have no statistically significant correlation whatsoever. Additionally, if a respondent reported incorporating Geotourism goals into their planning materials, then the respondent also reported a **higher** increase in both number of visitors and visitors who found the organization using the region’s Geotourism website than those organizations that did not.

Overall Impact

Participants were asked to interpret the comprehensive impact of the Sierra Nevada Geotourism Project. As indicated by Figure 9, 51% of respondents indicated that the Geotourism Project and its related activities had created no impact prior to the time of the survey. The remaining proportion is divided with 34% observing a little impact to their business and the region and 14% indicating somewhat of an impact to a significant impact.

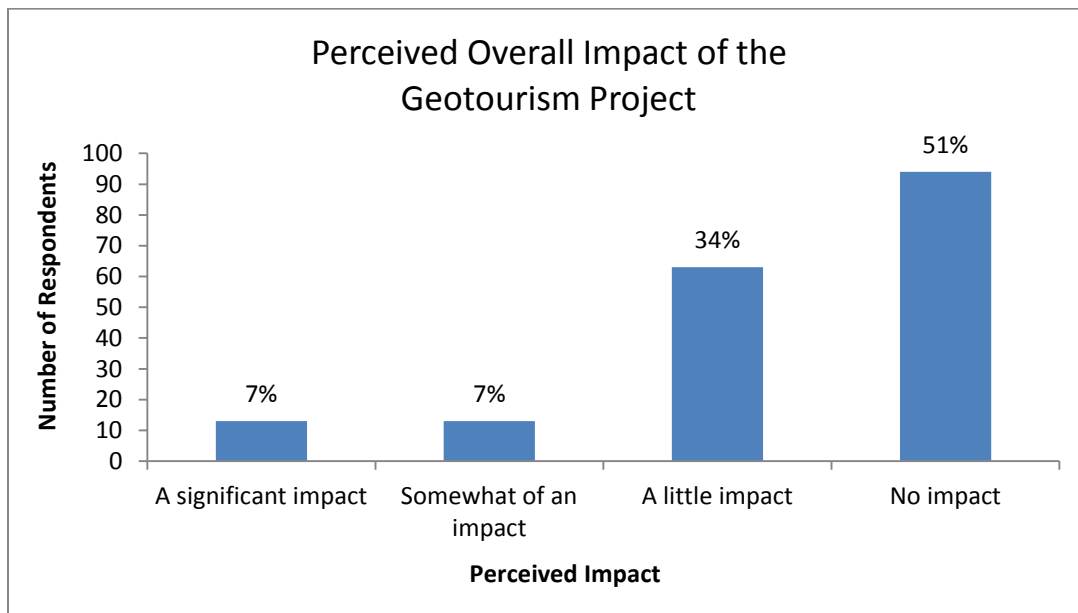


Figure 9: Sierra Nevada sites' perceived overall impact of the Geotourism Project

Results for the overall impact ordered logistic regression were fairly similar to those for social and economic impact (Table 3). Visitor education as a result of Geotourism and incorporation of

Geotourism goals into planning documents were both highly significant and positively related to a reported increase in overall impact. Awareness of involvement in the Geotourism project and whether an organization advertised participation in the project were also good predictors of reported overall impact.

Table 3: Question 16, ordered logistic regression results – Sierra Nevada

Variable	p-value	Interpretation
Awareness of Geotourism involvement (Q3)	.015*	Those aware that they are involved in the project will report a higher perception of overall impact than those unaware of involvement, all other variables held constant.
Visitor education as a result of Geotourism (Q6)	.001**	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher perception of overall impact, all other variables held constant.
Advertise participation in Geotourism (Q7)	.047*	Organizations that advertise participation in the Geotourism project will report a higher perception of overall impact than those that do not advertise, all other variables held constant.
Sustainability practices (Q9)	.074	Those sites that already implement sustainability practices will report a lower perception of overall impact than those who implement sustainability practices as a result of their involvement in the Geotourism project, all other variables held constant. The p-value shows suggestive but inconclusive evidence.
Stewardship practices (Q10)	.106	This variable is not statistically significant.
Incorporation of Geotourism goals into planning documents (Q14)	.000**	Organizations that have integrated Geotourism goals into their planning documents will report a higher perception of overall impact than those organizations that do not, all other variables held constant.

*= p-value is significant at the .05 level; **= p-value is significant at the .01 level.

Based on the tests of significance, visitor education as a result of involvement in the Geotourism project is the best predictor of impact. This variable has both broad explanatory power and high levels of statistical significance for social, economic, and overall impact indicators. Second in importance is an organization’s decision to incorporate Geotourism goals into their planning documents. All of the other predictors can also be useful in understanding the nature of impact as reported by sites participation in the Geotourism Project.

Crown of the Continent

The results of the 2011 Crown of the Continent Participant Assessment Survey are generated from 55 responses recorded prior to December 20, 2011. The survey opportunity was sent to 307 sites and just over 19% responded (n = 58), but results were calculated only for respondents who answered 5 or more of the 16 survey questions (n= 55). See Appendix E for results to each question on the 2011 survey.

Questions designed to gather demographic and contextual data provided information about sites' industry type and legal status. Most respondents (24%) provide accommodations to travelers (Figure 10). Additionally, non-profits are the most common (44%) organizational type (Figure 11).

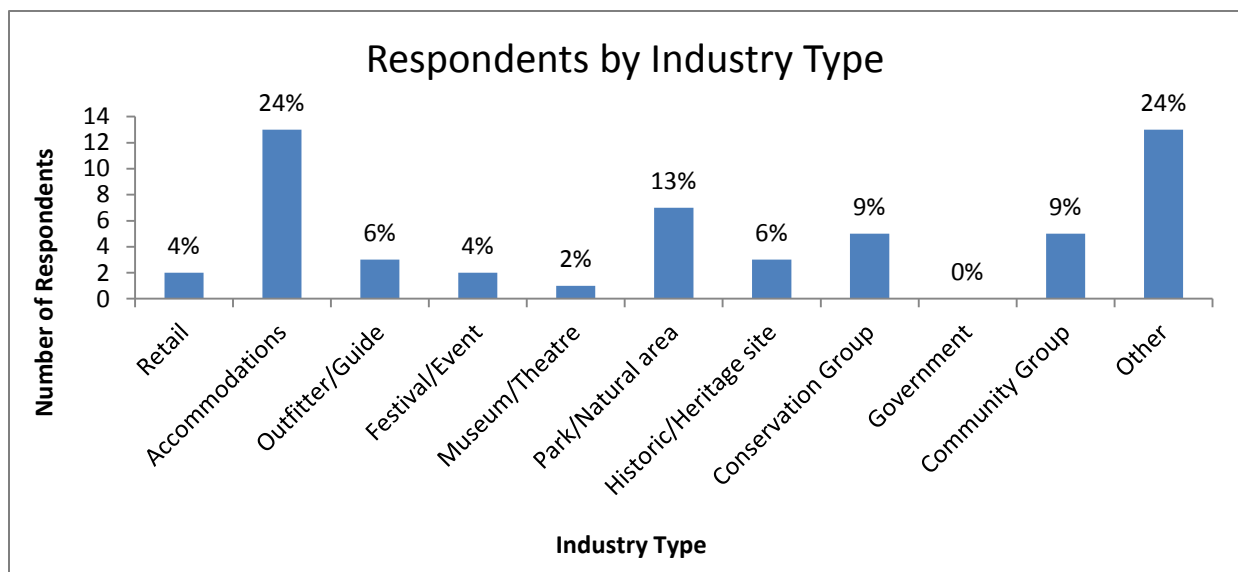


Figure 10: Crown of the Continent sites by industry type

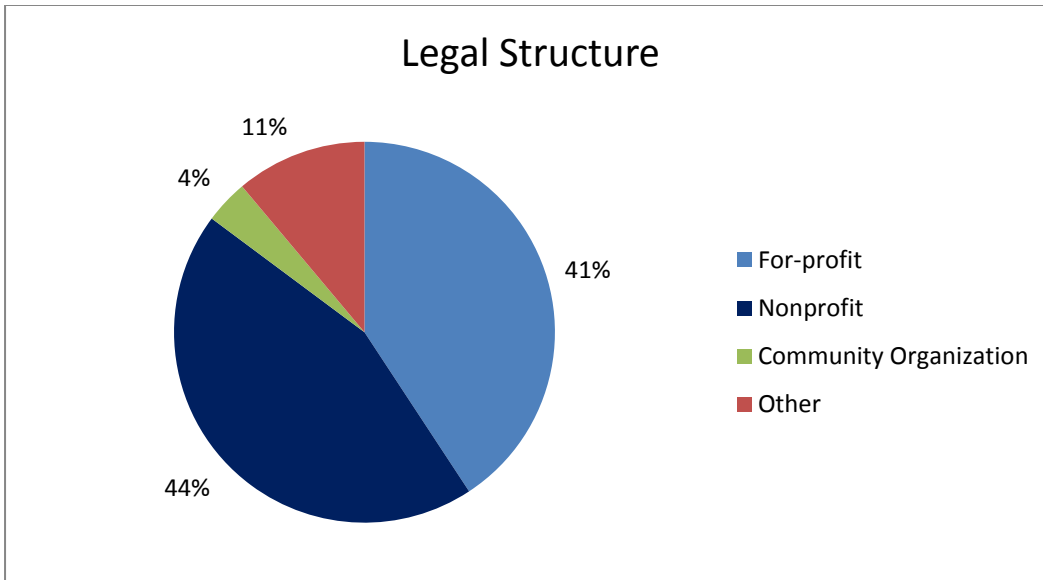


Figure 11: Crown of the Continent sites by legal structure

When asked how they are connected to the Geotourism Project, most survey respondents (61%) indicated that they are featured on the Sierra Nevada Geotourism website or the printed MapGuide. Of the remaining respondents, 22% indicated that they were not aware of their connection to the Geotourism Project and 15% reported that they are associated with the project in some other way. Respondents also reported on their strategies for promoting their involvement in the Geotourism Project. Most respondents (49%) do not advertise their participation in the Geotourism Project. Of the respondents that do, word of mouth and MapGuides on display are used by 64% of respondents. Display of brochures, flyers and website advertising are less common tactics implemented by only 36% of respondents. Advertising through other methods was reported by 16% of respondents.

Social Impact

A series of questions asked respondents about three aspects of social impact: regional identity and collaboration, visitor education, and partnership development. First, respondents were asked to rate whether the Geotourism Project had increased five aspects of regional identity and collaboration using a Likert scale ranging from "1" for *a great deal* to "3" for *not at all* (Figure 12). Participants were also given the option to respond: "I don't know." The mean response span was 1.8 for an increase in the

feeling of pride in the region to 2.1 for an increase in improved resident-visitor relations. Of the respondents that knew of the influence of Geotourism on these factors, 63% observed “somewhat of an increase” in all five aspects of regional identity and collaboration as a result of the Geotourism Project. Overall, a large portion of respondents (28%) indicated that they were not aware of whether or how the Geotourism Project may have influenced regional identity and collaboration.

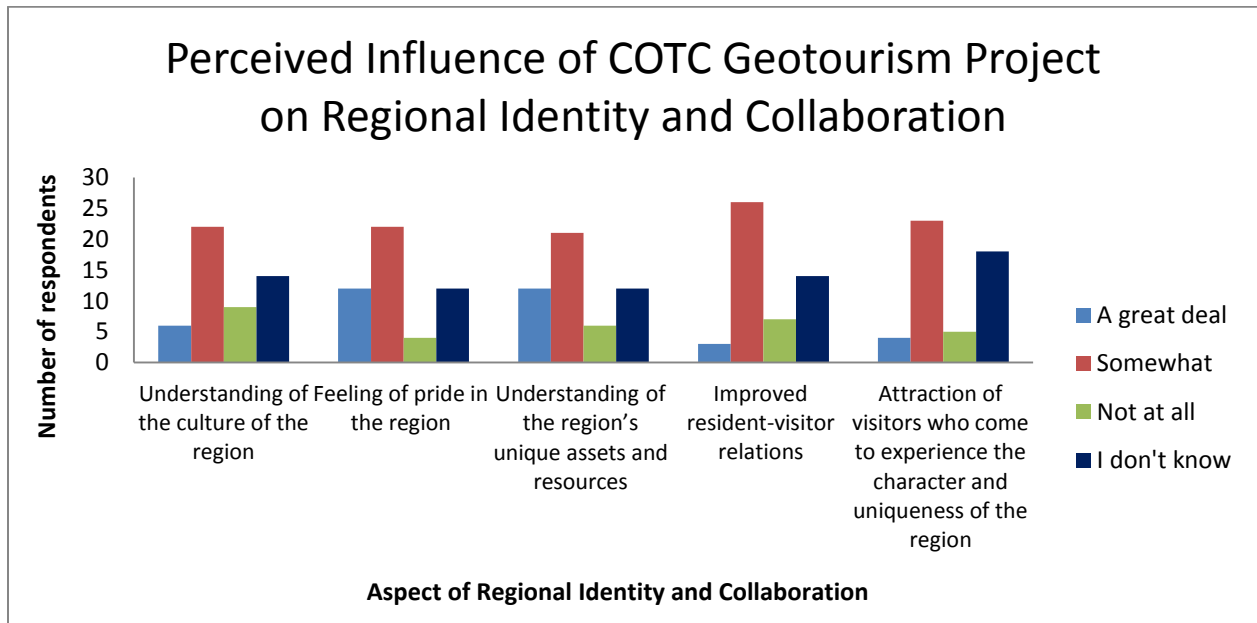


Figure 12: Influence of Geotourism Project on regional identity and collaboration in the Crown of the Continent region

Next, respondents were asked to indicate the impact of the Geotourism Project on visitor education initiatives. Most respondents (69%) indicated that have already implemented visitor education initiatives and the Geotourism project has had no impact on these efforts. The remaining 31% reported that they had started or increased visitor education as a direct result of the Geotourism project.

Finally, respondents were asked whether their involvement in the Geotourism Project had generated any new or improved business partnerships. As indicated in Figure 13, most respondents (45%) reported an increase in collaboration with other local businesses followed by chambers of

commerce (39%). Respondents also reported significantly increased partnerships and communication with historical societies (35%), community groups (32%) and government institutions (29%). Although the survey included 9 different options for types of partnerships, 26% of respondents indicated that they had developed relationships with entities other than those included in the survey.

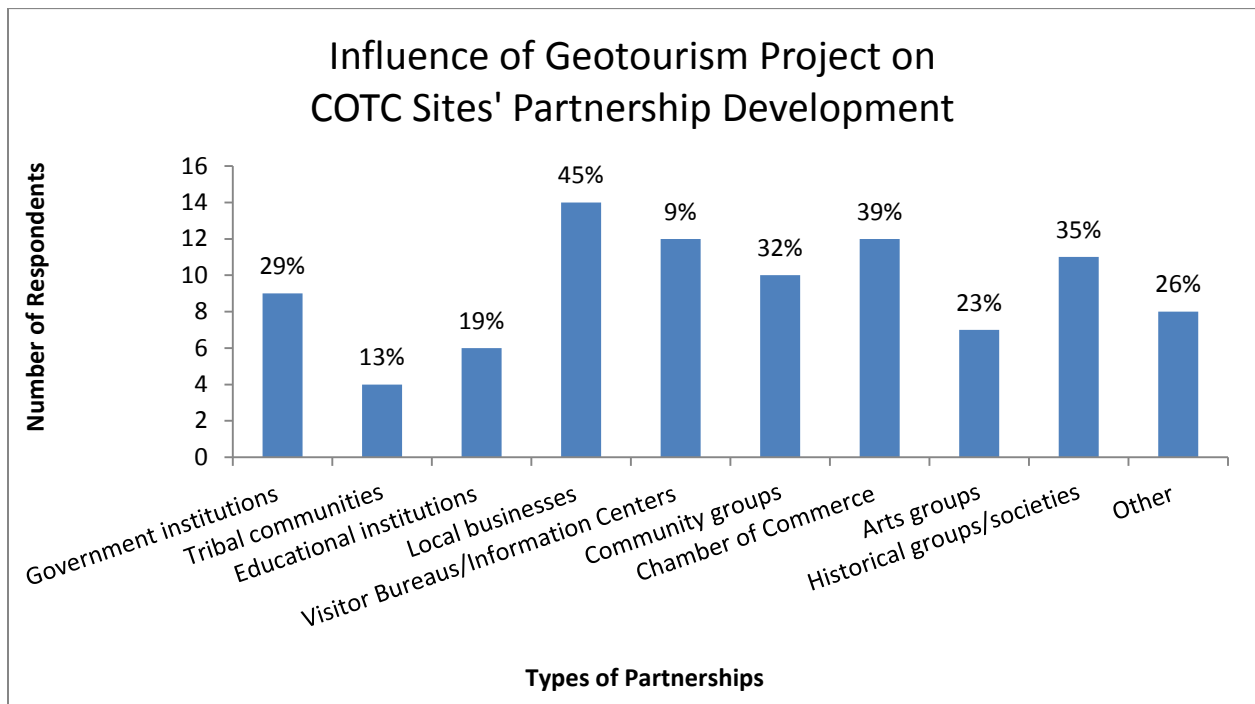


Figure 13: Effect of the Geotourism Project on Crown of the Continent sites' partnership development

The chi-square and Fisher's exact test results for the relationships between aspects of regional identity and collaboration and other variables in the COTC 2011 Participant Assessment survey are given in Table 4. A dashed line indicates that there was no statistically significant relationship between the two variables. A p-value lower than .05 indicates that there is a statistically significant relationship between the two variables, while a p-value between .05 and .10 indicates a relationship that is suggestive but inconclusive.

Table 4: Question 4, chi-square and Fisher's exact results – Crown of the Continent

	Question 4				
	Understanding of region's culture	Feeling of pride in the region	Understanding of region's unique assets	Improved resident-visitor relations	Attracting Geotourism visitors
Legal structure (Q2)	--	Nonprofits: .013*	Nonprofits: .028*	--	--
Awareness of involvement (Q3)	--	--	--	--	--
Education of visitors (Q5)	--	--	.031*	.054	--
Education as a result of Geotourism (Q6)	.001**	--	.035*	--	--
Advertise participation (Q7)	.059	--	--	--	--
Sustainability practices (Q9)	--	--	--	--	--
Stewardship practices (Q10)	--	--	.002**	.008**	--
Incorporation into planning documents (Q14)	--	--	--	.022*	--

*=p-value is significant at the .05 level; **= p-value is significant at the .01 level

The tests show relatively few significant relationships. Four of five indicators of regional identity and collaboration have at least one significant relationship with another variable. Unlike Sierra Nevada, an organization's awareness of involvement in the project or participation in stewardship activities had no bearing on the various aspects of social impact. Only two of five regressions for each indicator of regional identity and collaboration had any explanatory power at all. No adequate or statistically significant regression was found for an organization's feeling of pride in the region, improved resident-visitor relations, or an organization's ability to attract visitors who come to experience the character and uniqueness of the region.

Of the significant explanatory variables, participating sites' involvement in the education of visitors to their region had the most explanatory power. Holding all other variables constant, *if the Geotourism project motivates an organization to increase visitor education, that organization will also*

report a **higher** understanding of the culture of the region and a **higher** understanding of the region's unique assets and resources.

Additionally, the regressions found that non-profit organizations report a **lower** understanding of the region's unique assets and resources than other types of organizations, all other variables held constant. Finally, organizations that advertise participation in the Geotourism project will report a **higher** understanding of the culture of the region than those that do not advertise, all other variables held constant. No other variables included in the regressions were found to have any predictive power over regional identity and collaboration indicators.

Environmental Impact

Another series of questions targeted the environmental impact of the Geotourism Project. The majority of respondents (82%) indicated that they already implement strategies to improve the sustainability of their organizations and these initiatives are not a result of the Geotourism Project (Figure 14). Of the respondents that reported starting sustainability initiatives because of the Geotourism Project, most (10% of total respondents) pursued waste reduction measures followed by recycling programs and local purchasing and hiring (8%).

Survey participants were also asked about their involvement in Crown of the Continent regional stewardship activities ranging from in-kind donations to board membership for environmental organizations (Figure 15). Most respondents (74%) indicated that they are already actively engaged in stewardship activities and these efforts are not a result of the Geotourism Project. Of the respondents that did engage in stewardship activities because of the Geotourism Project, most (13%) reported offering in-kind contributions followed by creating partnerships or volunteering with environmental organizations (11%). Only 11% of all respondents indicated that they do not participate in stewardship activities of any sort.

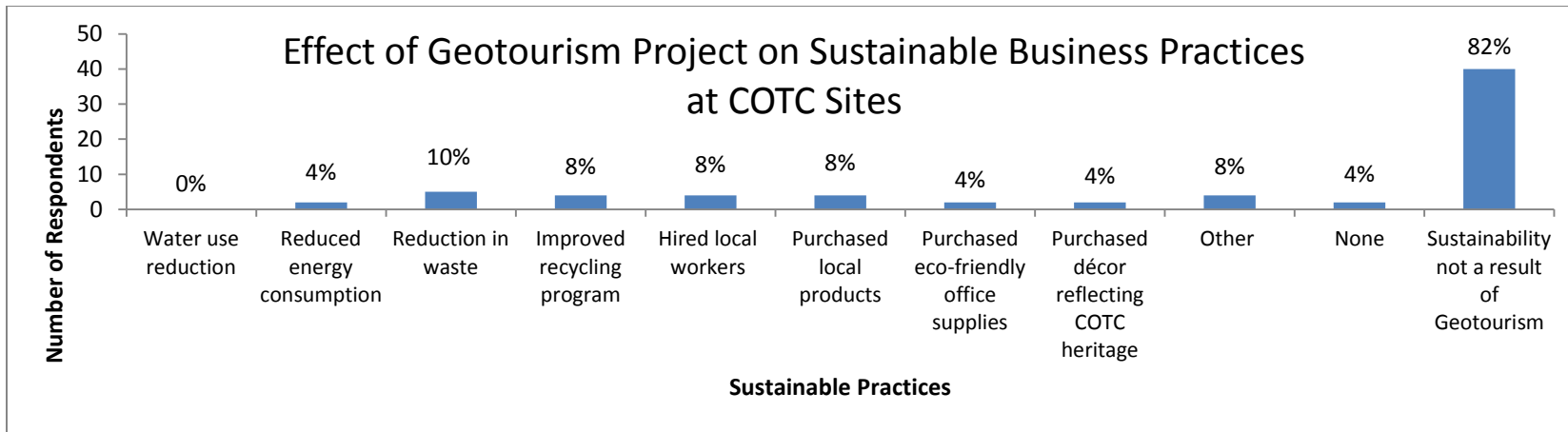


Figure 14: Effect of Geotourism Project on sustainable business practices at Crown of the Continent sites

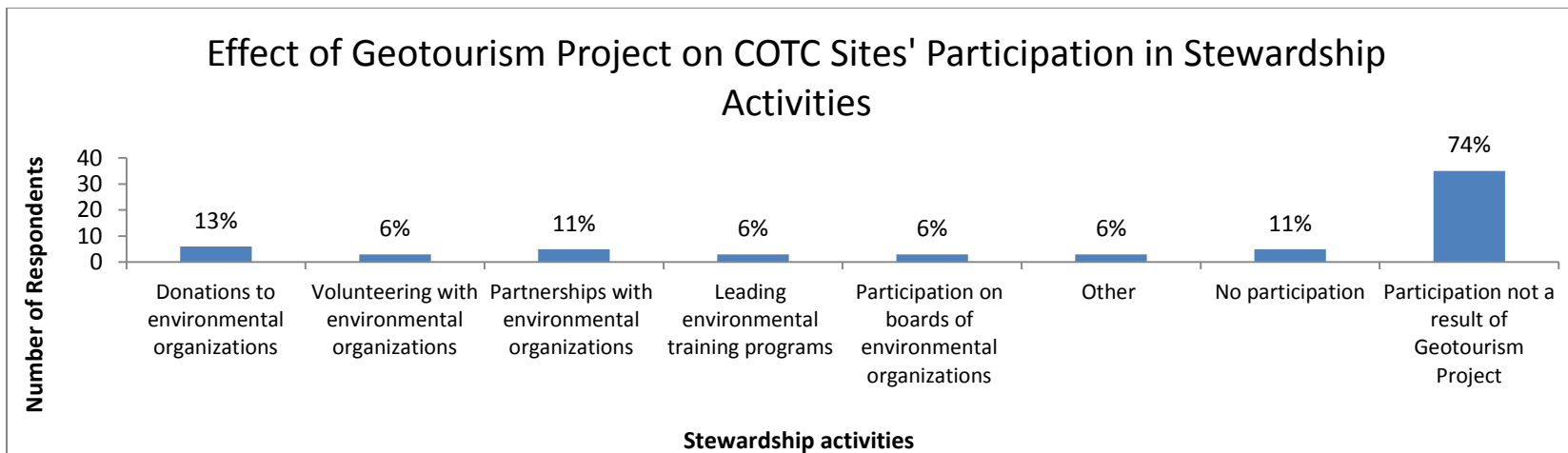


Figure 15: Effect of Geotourism Project on Crown of the Continent sites' participation in stewardship activities

Economic Impact

The last series of questions explored the Geotourism Project's contribution to Crown of the Continent's regional economy by gathering information related to visitor behavior, financial tracking and project integration. First, respondents were asked to rate whether the Geotourism Project had increased five aspects of visitor dynamics. Of the respondents that knew of the influence of Geotourism on these factors, 53% observed no increase in any aspect of visitor dynamics as a result of the Geotourism Project (Figure 16). Of those that did, the majority observed a growth in the number of visitors followed by an increase in referral visitors and length of stay. Overall, the largest proportion of respondents (54%) indicated that they did not know how or whether the Geotourism Project influenced visitor dynamics.

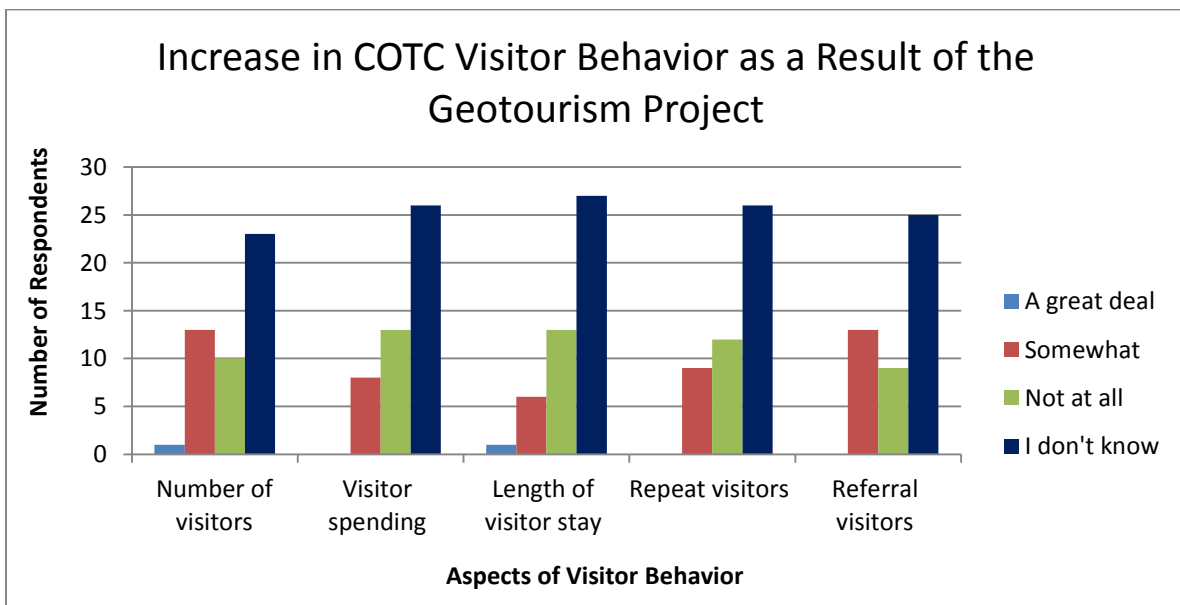


Figure 16: Increase in visitor behavior as a result of the Geotourism Project

Next, respondents were asked about the financial impacts of the Geotourism Project. Only 4% of respondents have identified revenue that can be specifically attributed to the Geotourism Project. However, when respondents were asked more generally if they tracked financial performance impacts of the Geotourism Project, 94% indicated that they did not.

Finally, respondents reported on whether they had incorporated the Geotourism Project goals into any of their planning or organizational documents. As Figure 17 indicates, 55% of respondents don't have organizational documents created or haven't edited these materials to include Geotourism principles. If respondents do incorporate tenants of Geotourism into their planning documents it is most often in their marketing plan (23%) and organizational mission, vision and values (23%).

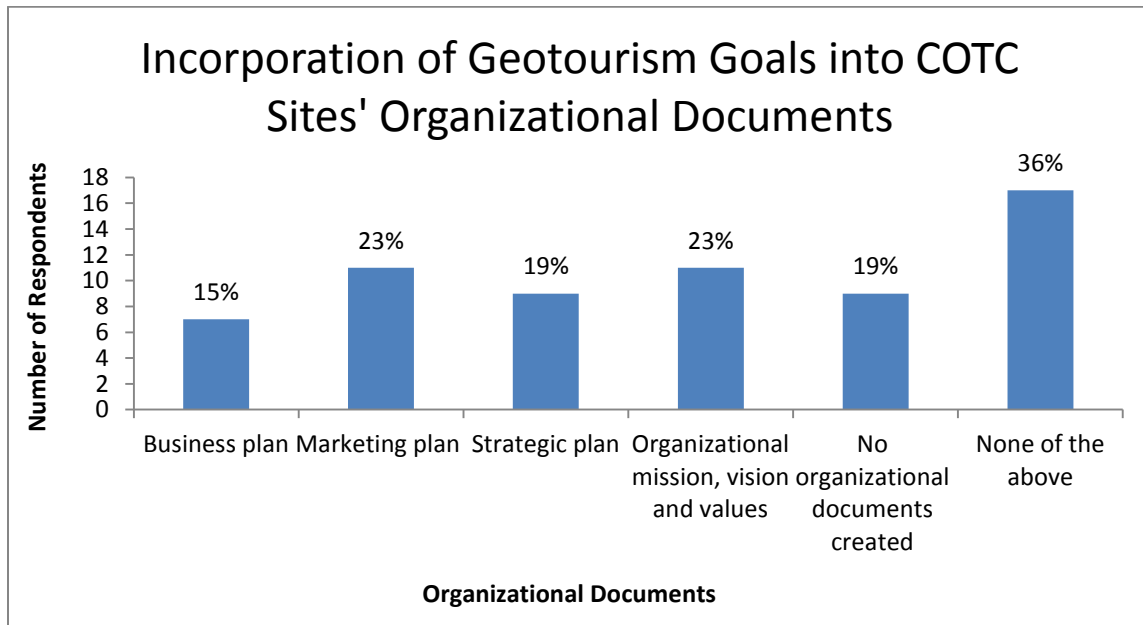


Figure 17: COTC Sites' Incorporation of Geotourism goals into organizational planning documents

Table 5 shows the results of the chi-square and Fisher's exact tests for the aspects of economic impact explored in the survey. Four questions have no statistically significant relationship with any measure of economic impact. Of importance are whether an organization has integrated sustainability practices as a result of the Geotourism project, and whether an organization has incorporated Geotourism goals into their planning documents. Visitor education as a result of involvement in the Geotourism project has the largest number of significant relationships with the various indicators of economic impact.

Table 5: Question 11, chi-square and Fisher's exact test results: COTC

	Question 11						
	Number of visitors	Visitor spending	Length of visitor stay	Repeat visitors	Referral visitors	Visitors who found org. on map	Visitors who found org. on website
Legal structure (Q2)	--	--	--	--	--	--	--
Awareness of involvement (Q3)	.037*	--	--	--	--	--	--
Education of visitors (Q5)	--	--	--	--	--	--	--
Education as a result of Geotourism (Q6)	--	.061	.000**	.027*	.001**	.024*	.001**
Advertise participation (Q7)	--	--	--	--	--	--	--
Sustainability practices (Q9)	--	--	--	.046*	--	--	.015*
Stewardship practices (Q10)	--	--	--	--	--	--	--
Incorporation into planning documents (Q14)	.010**	--	--	.026*	.015*	--	--

*=p-value is significant at the .05 level; **= p-value is significant at the .01 level.

Sample sizes for the tests of independence and the regressions in particular were quite low, which may explain the finding of few significant relationships among variables. Once again, visitor education as a result of Geotourism Project involvement appears to be the most important explanatory variable. Holding all other variables constant, *if the Geotourism project motivates an organization to increase visitor education, that organization will report:*

- A **higher** increase in visitor spending
- A **higher** increase in length of visitor stay
- A **higher** increase in repeat visitors
- A **higher** increase in visitors who found the organization on the region's Geotourism website

Other findings from the regressions conducted on aspects of economic impact show that organizations integrating Geotourism goals into their planning documents will report a **higher** increase

in the number of visitors than those organizations that do not. In addition, those sites that have already implemented sustainability practices will report a **lower** increase in repeat visitors than those who implement sustainability practices as a result of their involvement in the Geotourism project, all other variables held constant in the regression.

Overall Impact

Participants were asked to interpret the comprehensive impact of the Geotourism Project. Fifty-seven percent of respondents indicated that the Geotourism Project and its related activities had little to somewhat of an impact on their business and the Crown of the Continent region (Figure 18). A significant impact was reported by 10% of respondents and the remainder observed that the Geotourism Project had no impact on their business or the region.

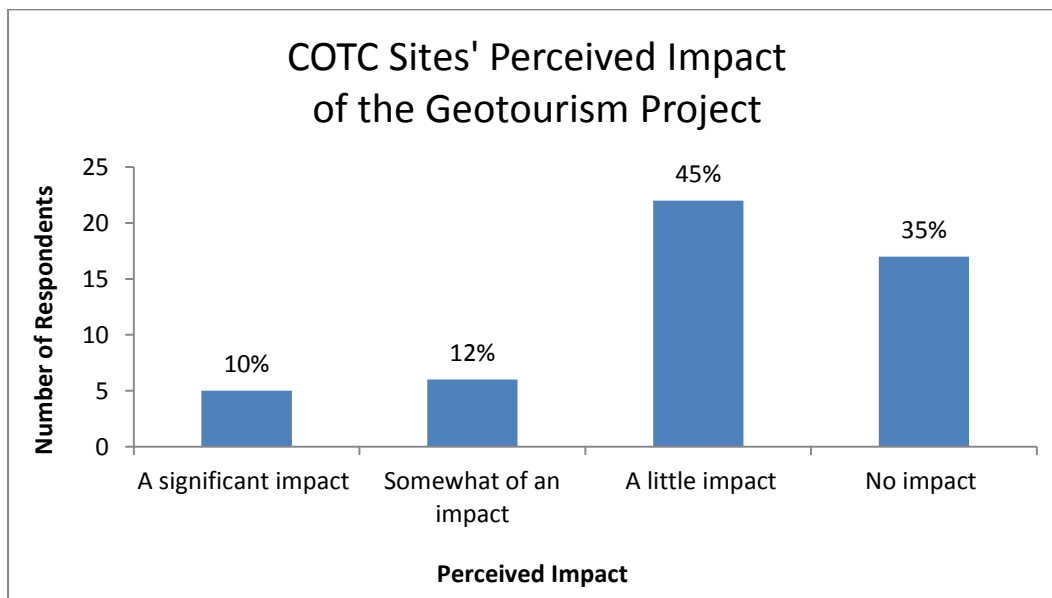


Figure 18: Perceived impact of the Geotourism Project

Regression analysis also showed that if a participating site in the COTC region indicates increased visitor education efforts due to involvement in the Geotourism Project then it will also report a **higher** perception of *overall impact*, all other variables held constant. In addition, if an organization has integrated Geotourism goals into their planning documents, then it will also report a **higher**

perception of *overall impact* than those that have not, all other variables held constant. As with the Sierra Nevada region, it appears that these two variables are the best predictors of overall impact. They apply to a large number of impact indicators and have fairly high level of significance across the board. In conjunction with the explanatory variables mentioned earlier in this section, they provide a better understanding of how the Geotourism Project is causing an impact in the COTC region.

Qualitative Results

Interviews with recommended and randomly selected sites featured on the Geotourism WebMap contribute to a deeper understanding of participants' firsthand experiences with the project. The interviews (n=3 per destination) as well as responses to an open-ended survey question (n=119 at SN, n=32 at COTC) together provide qualitative context to interpret statistical survey results. A number of survey respondents stated that they were unaware of their affiliation with the project, while interviewees were fairly knowledgeable about Geotourism in their region. The following is a summary of the qualitative findings from interviews with three COTC Geotourism businesses, three SN Geotourism businesses, and the open-ended survey question on each survey.

Sierra Nevada

Site Briefs

In the Sierra Nevada region, the first interview was conducted with the owner of a vacation rental property with four small historic homes. It is the only business of its kind in the area, since, according to the interviewee, other local vacation rentals have about 20+ rooms. The second interviewee was the manager of a history museum that uses artifacts to educate visitors about the history of the local region. The third interviewee was the owner of a vacation rental designed and decorated by a local artist.

All three interviewees initially joined the project with high expectations that it would increase visitation and exposure, and the National Geographic brand would offer marketing benefits. One

interviewee expressed particular excitement about its potential service given her small budget for advertising. The owners of the museum and historical vacation rental both reported that although their expectations of the project's marketing potential had dwindled, they still opted to be part of Geotourism in their region. All three destinations stated that no visitor has ever mentioned or inquired about Geotourism, and all three cite poor Internet connections due to their remote locations as a major problem with their ability to use the WebMap to its fullest potential.

Social Impact

In the Sierra Nevada region, the interview respondents placed the most emphasis on social impacts resulting from Geotourism involvement. For example, one of the vacation rental owners reported that Geotourism increased her involvement with the community through increased willingness to reach out to other organizations in the area. The owner was inspired to nominate a scenic drive for the MapGuide and communicate with other participants to collaborate on creating its nomination. The owner also pays more attention to the issues that other local organizations are experiencing, increasing her general understanding of the culture of the region. The other vacation rental also felt that even though she has not noticed economic benefits, she has benefited personally from Geotourism. The respondent stated that she learned more about her own area and was able to form her own opinions of what Geotourism meant to her. More broadly, she attributes Geotourism with increasing locals' sense of pride and knowledge about the area, but does not think that regional education is extending beyond the destination's immediate area.

While the history museum respondent says she is glad to be part of the project, she had hoped for more concrete benefits. Although she was very involved at first with promoting the project, nominating sites, and updating web pages, when her local Geocouncil was dissolved and the Sierra Nevada-wide council was formed, she felt left out of the process, claiming that the Geotourism project

has “become invisible” to her. With the Sierra Nevada-wide council, the respondent claims, “the thing that got lost was local involvement and concern.”

From the open-ended survey question, there were 119 responses that included feedback on social impact of the Geotourism project. A total of 16 comments expressed satisfaction with the project including statements that, “it helped our very small organization,” “it’s a valuable resource,” and that travelers “have come to us via the project.” Many stated that they were “very honored” to be part of the project, and two respondents commented they “learned a lot about the area” due to Geotourism. Conversely, 17 out of 119 open-ended responses from the survey were statements about either being unaware their site’s inclusion in the project, or not having received any outreach communication from representatives of the program.

Environmental Impact

In the Sierra Nevada region, one interviewee described positive environmental impacts of the Geotourism Program explaining, it “really got me thinking” about sustainability. Her business is now building recycling bins and switching to sustainable cleaning supplies because customers value those things. She also credits Geotourism with helping her to look more critically at the sustainability of her practices and the move away from harsh chemical cleaners. The other two interviewees expressed that they try to reduce their environmental footprint in order to reduce resource use as well as utility costs, but explicitly stated that this behavior had no connection with their participation in Geotourism.

Economic Impact

Each of the three sites interviewed expected the Geotourism project to increase visitor traffic and revenue for their businesses. To date, none have seen any economic growth that can be attributed to the project. However, no interviewee reported using a formal strategy to quantitatively determine these impacts as a result of the Geotourism Project.

Both vacation rental properties mentioned that the Geotourism Project makes them aware of new marketing strategies that emphasize their site's sustainability practices and cultural authenticity. One respondent said Geotourism helps them to "play to their [tourists'] preconceptions in a way that's beneficial." Another respondent reports that Geotourism has encouraged her business to become more "themed and organized" to enhance customer experience and satisfaction. Even though both vacation rentals claim that Geotourism has impacted how they advertise, none of the sites advertises their participation in the Geotourism Project on their websites. While one of the interviewees mentioned she acquired a Geotourism "badge" to display on their website, they haven't yet used it. Additionally, all three businesses admitted that they do not update their site information on the Sierra Nevada Geotourism website because of slow web connections and technological difficulties. For example, while the museum manager was initially very involved in updating the site's information on the Geotourism website, the museum eventually got "lost in the scale" of the project, so these activities ceased.

Additional comments about the economic impact of the project from the open-ended survey question include 6 remarks about lack of marketing or questions about how to market the program to travelers and to local businesses. One comment suggested that it should be promoted through the county and state chambers of tourism. None of the survey written responses suggested that Geotourism increased economic growth for individual sites, noting the age of the project as the reason.

Crown of the Continent

Site Briefs

In the Crown of the Continent region we spoke to the owner/operator of a luxury inn in Whitefish, Montana, a site that is both an art gallery and campground, and a family-run bed and breakfast in Alberta, Canada. The sites' primary interests in getting involved with the Geotourism Project varied from sharing the principles of Geotourism to the attraction of the National Geographic brand.

Social Impacts

Interviews revealed that the Geotourism Project resulted in a positive impact on many social indicators including the improvement of operations and owners' increased pride in their sites. For the bed and breakfast owner, participation in the Geotourism Project has elevated expectations of herself as a business owner. She says being on the WebMap is like being "part of a tribe" where fellow sites are partners, not competitors. Also as a result of the Geotourism Project, she no longer felt shy about talking to visitors about sustainable practices. All three sites interviewed attended sustainability workshops offered by the COTC Geotourism project manager. Twelve of the 32 open-ended survey responses gave positive feedback stating that the "website is really excellent" and that it helped "refine efforts to ensure [that] tourism protects the values that attract folks to the COTC."

The luxury inn owner indicated that the strongest impact of the project has been the provision of a tool, the printed MapGuide, with which she can build conversations with guests about the community and underlying principles of Geotourism. All three sites attribute increased visitor education to the impact of the Geotourism Project specifically because the MapGuide makes education a "more approachable task." However one interviewee explained that because of its scale, the MapGuide is not effective for recommending neighborhood establishments. Also, two of the interviewees commented that they often educate visitors about the region instead of the Geotourism Project, and do not use the terms "Geotourism" or "Geotourist" which to them are internal industry terms.

The owners of the campground also reported that they do not think that the MapGuide or the WebMap accurately represent the region because of lack of emphasis on the region's cultural importance to the nation. They also commented that the pictures online represent some, but not all, of the important assets of the region. Another interviewee revealed confusion about why some nominated sites were rejected. A survey respondent included the statement, "information on the site about us is incorrect."

The open-ended survey question garnered 7 out of 32 statements from sites about being unaware of their inclusion in the project, or not having received any outreach communication from representatives of the project.

Environmental Impacts

Interviewed sites reported minimal environmental impact. None of the interviewees reported that they had incorporated additional sustainability practices since joining the project because they already did as much as they felt they could to be an environmentally responsible organization. Their existing operational practices include conserving resources by limiting water and energy use is both a money saving and ethical practice. The dialogues revealed that resource conservation is a core value to each site but additional practices requiring a financial investment are unlikely to be implemented. However, one site surveyed reported that the project “gives a greater voice” to environmental stewardship.

Economic Impacts

The interviews included discussion about changes in marketing and business patterns since the implementation of the Geotourism Project. Two of the three sites expressed that becoming part of the project gave them the awareness and confidence they needed to market their sustainability efforts. Their new awareness of the on-line audience interested in Geotourism inspired them to leverage their businesses by differentiating it from conventional operations as a Geotourism enterprise.

The interviews revealed confusion about who is responsible for promoting the Geotourism Project. None of the COTC sites advertise Geotourism on their website with icons or links. None update their business information on their WebMap page. The campground owners expressed disappointment with National Geographic’s lack of communication with participants and lack of promotion for the project. Eight of the 32 open-ended survey responses included a remark on the lack of project publicity

and its minor visibility. One offered the advice of distributing “approved signage at venue[s] indicating participation with [the project].”

None of the interviews indicated profits or visitor traffic had increased due to implementation of the Geotourism Project. The owners of the campground reported that recently visitors have been staying for two nights instead of one, but they did not attribute this new trend to Geotourism. Each interviewee agreed that no visitor ever mentioned the project, nor had they heard of it. However, only one of the sites attempted, albeit informally, to track how visitors learned about her business.

Discussion& Recommendations

While the Geotourism structure is similar for both SN and COTC, they are independent, regional projects with very distinct project-implementation methodologies. Significant differences exist between the projects in each destination including age, size, project priorities, and management structure. Given these distinctions, each region was analyzed separately, neither combining results nor comparing across regions. However, results were closely aligned, and therefore recommendations are applicable to both regions. Social, environmental, economic and overall recommendations are detailed below, with a consolidated list located in Appendix F.

The following set of recommendations takes into account that sites participating in the Geotourism Program are typically family-run, small and medium-size enterprises. The scale and capabilities of these sites as well as the resources of the Geotourism project managers dictates that the successful implementation of the Geotourism Project moving forward will require efficient, low-cost strategies that truly add value. As such, recommendations focus on planning and tactics for effective implementation, methodology for leveraging the brand, and the development of systems to accurately

assess progress and results. Recommendations also consider that participating sites have been vetted for their pre-existing Geotourism qualities so even small increases in these characteristics are significant.

Social

Create and maintain a systematic, targeted method for communicating with participating sites. This recommendation consists of two parts: the first is to create a more targeted site contact list and the second is to implement communications on a regular, measurable basis. The survey showed that 20% of respondents from SN and 22% of respondents from COTC were not aware of their association with the Geotourism Project. Additionally, the survey response rate of approximately 20% for both destinations is credible for the typical research process. For a survey that is personally distributed to a targeted list of sites all participating and invested in the same project, this result is actually somewhat low. According to a report by Baruch (1999), published academic papers that collect data through questionnaires average a response rate of 55.6% with a standard deviation of 19.7%. Baruch (1999) also states that relatively low response rates may indicate a lack of ownership, satisfaction, or awareness of the project. More likely, the low response rates combined with the lack of project awareness reported by participants suggest that the contact lists used by SN and COTC are not as targeted as they could be. Approximately 15% of respondents in both regions indicated that rather than being owner/operators, they are associated with the project in some other way than as a nominated site. Additionally, three of six interviewees as well as a number of survey respondents indicated that they felt excluded or misrepresented by the Geotourism Project.

SN and COTC need to create a contact list that is comprised *only* of the owners/operators of participating sites listed on the MapGuide. This tool will ensure that each destination has a good understanding of the makeup of the MapGuide participants. Additionally, it will facilitate communication with the stakeholders who may have the most significant influence on project impact, keeping them engaged and informed. Building these relationships may help nominated sites feel more

included in the project, turning them into active collaborators and project enthusiasts. It would be strategic to communicate with owners/operators of participating sites on a regular basis to keep them in the loop and also to produce an evaluation metric that can be used for grant-writing purposes.

Provide a promotional tool-kit. Study interviews showed that participating sites had high expectations for the Geotourism Project to act as a marketing tool for their businesses. However, results showed that relatively few advertised participation in the project on their websites or at their facilities. Additionally participating sites were not regularly updating their information on the Geotourism WebMap itself. Finally, National Geographic's involvement in establishing Geotourism destinations does not extend to promoting Geotourism to potential travelers (Dion 2011). Therefore, the success of the Geotourism Project in both SN and COTC depends on helping sites make the connection between promoting Geotourism and a return on investment. To support this result, Leonard's (2011) survey results also revealed that several Geocouncil members reference the need for increasing visibility of the project, and a survey respondent in COTC asked for approved signage to indicate their participation (Leonard 2011).

As mentioned previously, most of the sites participating in the Geotourism Project in the SN and COTC regions are small- and medium-sized enterprises. They are focused on efficiency and economic return. They need strategies that are cost effective and easy to implement. It would be highly advantageous to these resource-limited organizations, and influential to the Geotourism Project itself, if SN and COTC provided participating sites with a simple promotional toolkit. This resource could be an inexpensive virtual package made easily available via the existing Geotourism websites. The various aspects of the tool-kit could be configured by organizations according to their needs. This package would not only support promotional initiatives, but also provide the infrastructure necessary for sites to track visitor dynamics.

Suggested toolkit features include the following:

- Boilerplate copy of standardized promotional information that can be used in a number of documents and contexts. This includes talking points on the Geotourism Project.
- A Geotourism decal or sign for storefronts, trailheads, and other participating sites.
- A logo and Geotourism link for the websites of participants.
- An informational card describing and promoting the Geotourism Project to place in hotel rooms, on meal tables, or similar locations
- A “how did you hear about us” card to be presented to visitors
- Tip sheets on how to use the brand, how to track performance and why advertising leads to a return on investment

Environmental

Incorporate programming that leverages existing sustainability knowledge and expertise. One of the tenets of Geotourism is conservation of resources. Businesses are encouraged to adopt sustainable practices in part to attract a more environmentally conscious tourist (NGS 1997). Sustainable practices have a significant impact not only on the local environment, but also on financial performance. Based on survey results, sites in Sierra Nevada that have existing sustainability practices report a lower degree of impact from the Geotourism Project than sites that do not implement these kinds of initiatives. These sustainability-focused organizations comprise the majority of survey respondents in both regions, with Crown of the Continent having an especially high composition (82% already incorporated sustainable business practices). This result is not surprising given that a triple bottom line organization, one that pursues environmental, economic and social sustainability, may naturally be drawn to a program such as Geotourism. It should be noted that there are still some sites, 14% at SN and 4% at COTC, which do not engage in any kind of sustainable business practices, even though this is one criteria for site selection.

It is not necessarily problematic that sites already implementing these practices report lower levels of project impact. The issue is how to capitalize on this cache of expertise to enhance the impact of the Geotourism Project. To that end, SN and COTC should consider incorporating programming into their implementation of the Geotourism Project that leverages existing local knowledge in sustainable business practices. By incorporating the owners/operators of businesses who are already leaders in sustainability into training programs, round table discussions, or brown bag lunches, each destination can lighten the workload of their managers while simultaneously creating project ownership and buy-in. Providing the owners/operators of participating sites the opportunity to lead or be involved in the implementation of the Geotourism Project may increase their perception of overall impact. Additionally, helping sites increase sustainability practices even a small amount can have a significant impact across the region.

More generally, tourism as a successful enterprise relies on the interdependencies that form within a community among tourism businesses, local residents, government agencies and other commercial entities (Stynes 1997). The goals of the SN and COTC projects which include capacity building and community collaboration could be advanced through a forum where participating sites gather to trade knowledge about sustainable business initiatives, marketing, or financial tracking. Sites could also share best practices for managing and creating environmental volunteer opportunities, training programs, or partnerships.

Economic

Create a strategic planning model for project guidance and implementation. A strategic planning model can be used to show how the Geotourism Project leverages its strengths and connects core strategies to achieve a clear and tangible impact (Emmett n.d.). Broad mission statements and organizational goals are often too vague to be used as success indicators for tracking purposes.

Therefore, a precursor for SN and COTC to measuring progress towards desired project outcomes may

be creating a desired impact map. To create the map, SN and COTC must specifically identify three key factors: (1) the desired impact of the organization, (2) the required or enabling conditions necessary for impact, and (3) specific strategies or activities needed to meet the required conditions. This exercise serves to further clarify important strategic questions such as: what is the organization’s desired impact, what strategies will be used to achieve this, and how results can be measured. The desired impact statement should be broad enough to guide long-term organizational actions, while the required conditions narrow the focus into more quantifiable impact areas. A template is provided in Figure 19 on the following page.

Creation of the impact map can be done by project staff, possibly with the inclusion of the Geocouncil in a group planning event. Appendix G contains a thorough how-to guide for creating an impact model as designed by Meredith Emmett at Third Space Studio. Using this tool, SN and COTC will be better able to see how their programs, actions, and strategies affect the required conditions that lead to desired overall impact. In addition, the impact map can be a simple but useful tool to provide to donors when justifying the cost of a new program or activity. Funders can more easily make the connection between a program that may not be providing economic returns but still fulfills the mission of the organization (Emmett n.d.).

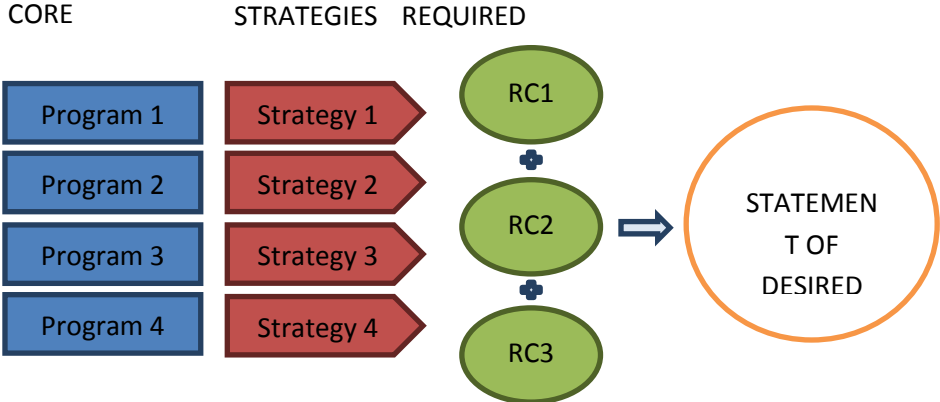


Figure 19: Desired Impact Map Template

Consider using a formal model to track or record progress toward meeting desired project impact at the regional level. In regards to framing the Geotourism Project for funders, which is a significant interest for both SN and COTC, both destinations should explore an appropriate, established model to track and report their progress toward meeting project goals. A study by Haber and Reichel (2005) indicates that reissuing a survey that measures subjective, objective, short and long-term progress towards organizations goals can identify performance measurements of small tourism ventures, like Geotourism sites.

SN and COTC should annually administer Kristen Leonard’s Geocouncil Survey as well as the 2011 Participant Assessment Survey to add to the baseline information gathered in this study. Survey findings will help both destinations target project goals and objectives for each fiscal year. Additionally, SN and COTC will have ongoing quantitative data for the Geotourism Project that will not only support funding applications but also build a more thorough picture of how project impact grows and changes over time. Like this study, the Haber (2005) report excludes indicators of return on investment because of the “complexity involved in receiving uniform reliable data from owner-managers.” However, it does include a list of indicators which may be helpful for future Geotourism surveys:

- Calculated growth in revenues
- Perceived customer satisfaction
- Success in generating profit year round
- Success in ongoing promotion of the tourism area
- Success in creation of awareness of [the tourism project]
- Business reputation

In addition, The Foundation Center’s “Tools and Resources for Assessing Social Impact” (TRASI) webpage features tools that could be an appropriate guide for SN and COTC’s reporting. One specific suggestion is to create a case statement for fundraising and circulating it among participating sites or the Geocouncil to solicit feedback (trasi.foundationcenter.org). This may foster increased investment in the fundraising process by multiple stakeholders. Additionally, improvements documented through

regular performance-measurement will add considerable strength to future SN and COTC grant applications.

Assist participating sites with tracking systems for visitor dynamics and financial performance.

Revitalizing the economy is one of the more anticipated project outcomes for the SN and COTC regions (Leonard 2011). However, return on investment for entrepreneurial initiatives like the Geotourism Project can take as long as 10 years (Clark 2012). The goals or measures of success prioritized by SN and COTC as well as the tools used to measure them should align with this reality.

Results from the survey indicate that only 2% and 4% of respondents from SN and COTC respectively, have identified revenue that can be specifically attributed to the Geotourism Project. This result is likely influenced by another finding from the COTC survey that 94% of participating businesses do not use – or do not have – systems in place for identifying and tracking visitor behavior or financial performance as they relate to the Geotourism. Only when visitor behavior and financial activity is measured appropriately can it be managed and used to accurately indicate impact. It would be beneficial for SN and COTC to include tracking systems in their Geotourism workshops or other communications with participating sites. Even something as simple as a visitor awareness or “how did you hear about us” survey will start the kind of data generation necessary for a more accurate evaluation of impact as well as the achievement of SN and COTC’s more long term goals.

Overall

Communicate to participating sites the importance of educating visitors about the Geotourism

Project. Increasing the education of visitors is critical to the goals of participating sites, SN and COTC projects and geotourism in general. The strongest result from the survey indicated that sites that increased visitor education about their region as a result of involvement in the Geotourism Project also increased many indicators of social impact including: a feeling of pride in the region, an understanding

of regional culture and assets, attraction of Geotourists, and improved resident-visitor relations. These sites also reported increased visitor numbers, visitor spending, visitor length of stay and a higher perception of overall impact from the Geotourism Project. SN and COTC should convey to participating sites how the behavior of educating visitors can translate into these types of business results. Not only would encouraging sites to implement visitor education initiatives potentially improve their economic return on investment, it would also achieve the specific goals of SN and COTC to connect visitors to the land, promote visitor learning opportunities, and increase public awareness about the region (DeJonghe 2011, Leonard 2011). Additionally, raising awareness about the unique character of the area may promote the visitor's role in advancing the well-being of a destination (Clemmons 2011). In short, the survey's findings suggest that increasing the amount and quality of visitor education by individual sites could have a significant and influential impact on individual sites, the region, and geotourism.

Encourage participants to incorporate Geotourism Project goals into their planning documents. One of the most potentially significant results from the survey is that sites incorporating geotourism goals into their planning documents report a higher increase in both numbers of visitors and visitors who found their organization through the Geotourism website. These sites also report a higher perception of overall project impact. The action of incorporating Geotourism goals into business strategy, mission, vision, and values seems to be a proxy for project buy-in. It may facilitate a site's transition from passive participant to active Geotourism stakeholder. Integrating these goals into planning documents encourages organizations to think of the Geotourism Project in both the short- and long term as they will use their revised materials to guide daily activities as well as multi-year strategic planning. This recommendation would be fairly simple for SN and COTC to incorporate into their existing geotourism workshops and it may have tremendous influence on overall project impact.

Conclusion

Geotourism is driven by a vision to promote sustainability and stewardship globally. It is a growing program with the potential to assist many local communities in their efforts to protect and enhance local culture and resist poorly planned development and mass tourism. This report sheds light on the need for Geotourism destinations to prioritize their management objectives to overcome the challenges of a lack of awareness about the project among participating sites, and to take better advantage of project strengths and opportunities. Informed management will not only promote social, environmental, and economic benefits for the communities, but also leverage the project's credibility for funding. Implementing the recommendations developed here will hopefully yield an increase in positive impacts among participating sites in the Sierra Nevada and Crown of the Continent regions.

References

- Babbie, E. (2006). *The practice of social research, 11th ed.* Thompson Wadsworth.
- Belisle, F. J., Hoy, D. R. (1980). *The perceived impact of tourism by residents: a case study in Santa Marta, Colombia.* Annals of Tourism Research, VII (1).
- Baruch, Y. (1999). Response Rate in academic studies—a comparative analysis. Human Relations. Vol. 52, No. 4.
- Boley, B. et al. (2011). Measuring Geotourism: Developing and Testing the Geotraveler Tendency Scale (GTS). Journal of Travel Research. Vol. 50 (5). 567-587.
- Bosak, K. et al. (2010). Deconstructing the ‘Crown of the Continent’: Power, Politics and the Process of Creating National Geographic’s Geotourism MapGuides. Tourism Geographies. Vol. 12. No. 3. 460-480.
- Boyle, D. (2011). November 10 Telephone Interview.
- Boyle D. (2012). Web Page: About Crown of the Continent.
<http://www.crownofthecontinent.net/about.php>. Retrieved 2/10/12.
- Budeanu, A. (2005). Impacts and responsibilities for sustainable tourism: a tour operator’s perspective. *Journal of Cleaner Production*, 13, 89-97.
- Choi, H. and Sirakaya, E. (2006). Sustainability indicators for managing community tourism. Tourism Management. Vol. 27. 1274-1289.
- Clemmons, D. (2011). Volunteerism and Positive Social Impact. *Tourism-Review.com*, 24-25. Retrieved February 18 2012, from <http://www.tourism-review.com/travel-tourism-magazine-the-positive-social-impact-of-voluntourism-article1538>
- COSE. Stories of Success. Retrieved September 16, 2011. <http://www.cose.org/Member%20Benefits/Business%20Savings/Energy%20Solutions/Energy%20Resource%20Guide.aspx>
- DeJonghe, N. (2011). November 10 Telephone Interview.
- Dillman, D. A. (2007). Mail and Internet surveys: The tailored design method (3rd ed.). New York: John Wiley & Sons.
- Dion, J. (2011). Web page: “Center for Sustainable Destinations: About Geotourism” Updated 2008. http://travel.nationalgeographic.com/travel/sustainable/about_geotourism.html. Accessed 2/24/12.
- Edwards, M. (n.d.). *Community guide to development impact analysis.* Retrieved from http://www.lic.wisc.edu/shapingdane/facilitation/all_resources/impacts/analysis_intro.html.

- Emmett, M. (n.d.). Impact Models: Focusing your nonprofit on results. Third Space Studio.
- Estrella, M., Gaventa, J. (1998). *Who counts reality? Participatory monitoring and evaluation: A literature review* (IDS Working Paper 70). Institute of Development Studies.
- Haber, S., and Reichel, A. (2005) Identifying Performance Measures of Small Ventures-The Case of the Tourism Industry. *Journal of Small Business Management*, 43(3), 257-286.
- Honey, M. S. (1999). Treading Lightly? Ecotourism's Impact on the Environment. *Environment: Science and Policy for Sustainable Development*, 41(5), 4-9.
- Institute for Tourism and Recreation Research. (2009). *Geotourism in the Crown of the Continent*. Missoula, MT: Boley, Nickerson.
- Institute for Tourism and Recreation Research. (2010). *Statewide vacationers to Montana: are they Geotravelers?*. Missoula, MT: Boyle, Nickerson.
- Institute for Tourism and Recreation Research. (2010). *The Geotourism handbook: a reference guide for Montana businesses*. Missoula, MT: Boyle, Nickerson.
- International Ecotourism Society (2006). *Implementing monitoring and evaluation systems for impact*. Toth, Russillo, Crabtree, & Bien.
- Johnson, S. (2008). Sustaining and Enhancing the Geographic Character of a Place: indicators for assessing Geotourism in the Crown of the Continent. University of Calgary (Canada).
- Johnson, S. (2011). . Web page: "Roundtable on the Crown of the Continent". Crownroundtable.org. Updated 2011. <http://crownroundtable.org/initiatives.html>. Accessed 2/10/2012
- Kamansky, B., Dyer, B., & DeJonghe, N. (2011). PowerPoint: "Sierra Nevada Geotourism". http://madera.granicus.com/MetaViewer.php?view_id=16&clip_id=901&meta_id=197974
- Kiernan, N. E. (2001). *Penn State Extension Program Evaluation Tipsheets*. Retrieved from <http://extension.psu.edu/evaluation/titles.html>.
- Knox, S., and Burkard, A. (2009). Qualitative Research Interviews. *Psychotherapy Research* 19, no 4-5.
- Leonard, K. (2011). Measuring Success of National Geographic Society's Geotourism Program. Duke University Master's Project.
- McKercher, B. (1993). Some fundamental truths about tourism: understanding tourism's social and environmental impacts. *Journal of Sustainable Tourism*, 1(1), 6-16.
- National Science Foundation. (2002). *The 2002 User Friendly Handbook for Project Evaluation* (Pub No. 99-12175). Arlington, VA: Westat
- National Geographic. (2008). Press Release: "New Geotourism MapGuide Spotlights Crown of the Continent. URL: <http://travel.nationalgeographic.com/travel/sustainable/pdf/cocpress3-29.pdf>

- NG-CSD. (2008). Crown of the Continent. www.csdimapct.org. Updated 2008.
http://www.csdimapct.org/content_detail.php?uid=csdF272233913BD811AE. Accessed 2/10/2012.
- NG-CSD. (2009). Four-region Sierra Nevada Geotourism MapGuide. www.csdimapct.org. Updated 2010.
http://www.csdimapct.org/content_detail.php?uid=csd3192027558B8C02C2. Accessed 2/10/2012.
- NGS. (2011). *Center for Sustainable Destinations*. Retrieved from
http://travel.nationalgeographic.com/travel/sustainable/about_geotourism.html.
- NGS. (2011). *Geotourism MapGuides* [PowerPoint Slides].
- NGS. (n.d.). *The Geotourism Charter*. Washington, DC. Retrieved from
http://travel.nationalgeographic.com/travel/sustainable/pdf/geotourism_charter_template.pdf.
- NGS. (2012). Glacier National Park and Waterton National Park Travel Planning - Crown of the Continent.
www.crownofthecontinent.net. Accessed 2/10/2012
- NGS. (2012). Sierra Nevada Travel Planning Official National Geographic MapGuide.
<http://www.sierranevadageotourism.org/>. Accessed 2/10/2012.
- O'Leary, Z. (2005). *Researching real-world problems: a guide to methods of inquiry*. London: Sage.
- Orams, M. B. (1995). Towards a more desirable form of ecotourism. *Tourism Management*, 16(1), 3-8.
- Parker, R. A., Rea, L. M. (2005). *Designing and conducting survey research: a comprehensive guide, 3rd ed.* Wiley, John & Sons, Inc.
- Recreational Boating & Fishing Foundation. (2006). *Best practices guide to program evaluation for aquatic educators*. Arlington, VA: Marynowski.
- Rome, A. (1999). *Ecotourism impact monitoring: a review of methodologies and recommendations for developing monitoring programs in Latin America*. USAID, Ecotourism technical report series number 1.
- Rossi, P. H., Lipsey, W. M., & Freeman, H. E. (2004). *Evaluation: A systematic approach* (7th ed.).
- Scheyvens, R. (1999). Ecotourism and empowerment of local communities. *Tourism Management*, 20, 245-249.
- Sierra Nevada Geotourism. (2010). *Sierra Nevada Geotourism Project Supporters*.
- Stronza, A. (2008). Community views of ecotourism. *Tourism Management*. Vol. 35 (2). 448-468.
- Stynes, D. J. (1999). *Economic Impacts of Tourism*. Retrieved from
<http://www.msu.edu/course/prr/840/econimpact/pdf/ecimpvol1.pdf>.

- Sustainable Tourism CRC. (2006). *Concepts of tourism yield and their measurement*. Queensland, AU: Dwyer, Forsyth, Fredline, Jago, Deery, & Lundie.
- Driml, S. and McLennan, C. (2010). Sustainable Tourism CRC. *Handbook on measuring the economic value of tourism to national parks*. Queensland, AU.
- Travel and Tourism. (2011). World Travel and Tourism Council.
- Trellis, W. (1997). Application of a Case Study Methodology. <http://www.nova.edu/ssss/QR/QR3-3/tellis2.html>. Retrieved 2/25/12.
- Tsaur, S., Lin, Y., and Lin, J. (2006). Evaluating ecotourism sustainability from the integrated perspective of resource, community and tourism. *Tourism Management*. Vol. 27. 640-653.
- UNFPA. (2004). *Programme Manager's Planning Monitoring & Evaluation Toolkit*. New York, NY.
- University of Wisconsin - Extension. (2002). *Evaluation Quick Tips*. Retrieved from <http://www.uwex.edu/ces/pdande/resources/index.html>.
- US Environmental Protection Agency. (2011). *Evaluation of Environmental Programs*. Retrieved from <http://www.epa.gov/evaluate/>.
- Valentine, P. S. (1993). Ecotourism and nature conservation. *Tourism Management*, 107-115.
- Williams, D. R., McDonald, C. D., Ride n, C. M., & Uysal, M. (1995). Community attachment, regional identity and resident attitudes towards tourism. In *Proceedings of the 26th Annual Travel and Tourism Research Association Conference Proceedings* (pp. 424-428). Wheat Ridge, CO: Travel and Tourism Research Association.
- World Resources Institute (2000). *Monitoring for Impact: Lessons on natural resources monitoring from 13 NGOs*. Washington, DC: Layke, Kristensen, Maddox, & Rodenburg.

Appendix A: 2011 Participant Assessment Survey

Survey Introduction

Hello, and thank you for agreeing to take our survey. We are graduate students at Duke University working with National Geographic to conduct a survey to explore the impact of the Geotourism Project on the Crown of the Continent region. The goal of our survey is to find out more about your organization's experience with the Geotourism project to determine how well its goals are being accomplished. Geotourism is tourism that sustains or enhances the unique character of a place – its environment, culture, aesthetics, heritage, and the well-being of its residents. The Crown of the Continent project aims to provide opportunities for visitors and residents to learn, experience, celebrate and contribute to the region. It is designed to support cooperative projects and encourage sustainable businesses through activities such as stewardship, education and regional promotion. We would greatly appreciate your participation in our short 5-10 minute survey. Your responses are voluntary and completely confidential. You may also stop at any time or skip questions that you feel uncomfortable answering. Your input is truly valuable to us, and to the improvement and success of the National Geographic Geotourism Project. Please feel free to express your opinions for the following questions; there is no correct or incorrect response. Thank you for your time!

Survey Questions

Q1 Which of the following best categorizes your organization?

- Retail (1)
- Accommodations (2)
- Outfitter/Guide (3)
- Restaurant/Cafe (4)
- Festival/Event (5)
- Museum/Theater (6)
- Park/Natural Area (7)
- Other (please describe) (8) _____

Q2 Which of the following best characterizes the legal status of your organization?

- For-profit business (1)
- Private, nonprofit (2)
- Public, government (3)
- Unincorporated or community organization (4)
- Other (please describe) (5) _____

Q3 What is your organization's connection to the Geotourism Project in the Crown of the Continent?

- featured on www.crownofthecontinent.net (1)
- featured on the printed Crown of the Continent Geotourism map (2)
- Other (please describe) (3) _____
- I am not aware of any connection to the Geotourism Project (4)

Q4 As a result of participation in the Geotourism Project, has your organization increased any of the following:

	A great deal (1)	Somewhat (2)	Not at all (3)	I don't know (4)
Understanding of the culture of the region (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling of pride in the region (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding of the region's unique assets and resources (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved resident-visitor relations (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attracting visitors who come to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

experience the character and uniqueness of the region (5)				
---	--	--	--	--

Q5 Does your organization educate visitors about the Crown of the Continent region?

- Yes (please describe) (1) _____
- No (2)
- I don't know (3)

If Yes Is Selected, Then Skip To Which of the following best describes...

Q6 Which of the following best describes visitor education at your organization?

- My organization has increased visitor education as a result of the Geotourism Project (1)
- My organization has started visitor education as a result of the Geotourism Project (2)
- The Geotourism Project did not influence my organization's visitor education (3)

Q7 How does your organization advertise participation in the Geotourism Project? (please check all that apply)

- Advertise participation on your organization's website (for example: through a link or button to the geotourism website) (1)
- Brochures or Flyers (2)
- Word of mouth (3)
- MapGuides on display (4)
- Other (please describe) (5) _____
- Do not advertise (6)

Q8 Has your organization's involvement in the Geotourism Project fostered more communication and collaboration with any of the following: (please check all that apply)

- Government institutions (1)
- Tribal communities (2)
- Educational institutions (3)
- Local businesses (4)
- Visitor Bureaus / Information Centers (5)
- Community groups (6)
- Chamber of Commerce (7)
- Arts groups (8)
- Historical groups/societies (9)
- Other (please describe) (10) _____

Q9 As a result of participation in the Geotourism Project, has your organization implemented any of the following sustainability practices? (please check all that apply)

- Reduction in water use (1)
- Reduction in energy consumption (2)
- Reduction in waste (3)
- Started or improved a recycling program (4)
- Hired local workers (5)
- Purchased local products and supplies (6)
- Purchased eco-friendly office or cleaning supplies (7)
- Purchased décor materials that reflect the Crown of the Continent's unique culture and heritage (8)
- Other (please describe) (9) _____
- No sustainability practices implemented (10)
- My organization already implements sustainability practices. They are not a result of the Geotourism Project. (11)

Q10 As a result of participation in the Geotourism Project, does your organization participate in any of the following stewardship activities? (please check all that apply)

- Financial or in-kind donations to organizations working on environmental issues (1)
- Volunteer time to organization working on environmental issues (2)
- Partnerships with organizations working on environmental issues (3)
- Leading training programs in natural resource conservation or management (4)
- Participation on boards of environmental organizations (5)
- Other (please describe) (6) _____
- No participation (7)
- My organization already participates in stewardship activities. They are not a result of the Geotourism Project. (8)

Q11 As a result of participation in the Geotourism Project, has your organization increased any of the following:

	A great deal (1)	Somewhat (2)	Not at all (3)	I don't know (4)
Number of visitors (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of visitors who come to experience the uniqueness and character of the region (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitor spending (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Length of visitor stay (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Repeat visitors (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referral visitors (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitors who found your organization on the printed Geotourism map (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitors who found your organization on www.crownofthecontinent.net (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12 Does your organization track the impacts of the Geotourism Project on financial performance?

- Yes (please describe) (1) _____
- No (2)
- I don't know (3)

Q13 Has your organization identified revenue specifically attributed to the Geotourism Project?

- Yes (please describe) (1) _____
- No (2)
- I don't know (3)

The goal of Geotourism is to promote tourism that sustains or enhances the geographical character of a place – its environment, culture, aesthetics, heritage, and the well-being of its residents. Please consider this information as you answer the following question.

Q14 Has your organization integrated Geotourism goals into any of the following: (please check all that apply)

- Business plan (1)
- Marketing plan (2)
- Strategic plan (3)
- Organizational mission, vision and values (4)
- No organizational documents created (5)
- None of the above (6)

Q15 How often do visitors ask/talk about the Geotourism Project?

- Very Frequently (1)
- Frequently (2)
- Sometimes (3)
- Rarely (4)
- Never (5)

Q16 What kind of impact has the Geotourism Project had on your organization?

- A significant impact (please describe) (1) _____
- Somewhat of an impact (2)
- A little impact (3)
- No impact (4)

Q17 Would you add, change, eliminate or improve anything about the Crown of the Continent Geotourism Project? Is there anything else you would like to say?

Appendix B: Survey Coding

Q1 Which of the following best categorizes your organization?

- Retail (food products/hard goods/soft goods) (1)
 - Accommodations (2)
 - Outfitter/Guide (3)
 - Festival/Event (4)
 - Museum/Theater (5)
 - Park/Natural Area (6)
 - Historic/heritage site (7)
 - Conservation group (8)
 - Government (9)
 - Community group (10)
 - Other (please describe) (11) _____
- [missing] (.m)

Q2 Which of the following best characterizes the legal status of your organization?

- For-profit business (1)
 - Private, nonprofit (2)
 - Public, government (3)
 - Unincorporated or community organization (4)
 - Other (please describe) (5) _____
- [missing] (.m)

Q2_pdummy – for profits are 1, everything else is 0

Q2_ndummy – nonprofits are 1, everything else is 0

Q2_gdummy – government is 1, everything else is 0

Q3 What is your organization's connection to the Geotourism Project in the Crown of the Continent?

- (Q3_1) featured on www.crownofthecontinent.net (1)
- (Q3_2) featured on the printed Crown of the Continent Geotourism map (1)
- (Q3_3) Other (please describe) (1)(Q3_3_TEXT) _____
- (Q3_4) I am not aware of any connection to the Geotourism Project (1)

Q3_dummy – 1=aware of connection, 0=not aware of any connection to the project

Q4 As a result of participation in the Geotourism Project, has your organization increased any of the following: [missing] (.m)

	A great deal (1)	Somewhat (2)	Not at all (3)	I don't know (.i)
Understanding of the culture of the region (Q4_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling of pride in the region (Q4_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding of the region's unique assets and resources (Q4_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved resident-visitor relations (Q4_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attracting visitors who come to experience the character and uniqueness of the region (Q4_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4_SCORE (1-15); a combination of the total score from each.

Q5 Does your organization educate visitors about the Crown of the Continent region?

- Yes (please describe) (1) _____
 - No (0)
 - I don't know (.i)
- [missing (.m)]

If Yes Is Selected, Then Skip To Which of the following best describes...

Q6 Which of the following best describes visitor education at your organization? (select one)

- My organization has increased visitor education as a result of the Geotourism Project (1)
 - My organization has started visitor education as a result of the Geotourism Project (2)
 - The Geotourism Project did not influence my organization's visitor education (3)
- [missing] (.m)

Q7 How does your organization advertise participation in the Geotourism Project? (please check all that apply)

- (Q7_1) Advertise participation on your organization's website (for example: through a link or button to the geotourism website) (1)
 - (Q7_2) Brochures or Flyers (1)
 - (Q7_3) Word of mouth (1)
 - (Q7_4) MapGuides on display (1)
 - (Q7_5) Other (please describe) (1) (Q7_5_TEXT) _____
 - (Q7_6DUMMY) (1 = Do not advertise, 0 =do advertise in some way)
- [missing] (.m)

Q8 Has your organization's involvement in the Geotourism Project fostered more communication and collaboration with any of the following: (please check all that apply)

- (Q8_1) Government institutions (1)
- (Q8_2) Tribal communities (1)
- (Q8_3) Educational institutions (1)
- (Q8_4) Local businesses (1)
- (Q8_5) Visitor Bureaus / Information Centers (1)
- (Q8_6) Community groups (1)
- (Q8_7) Chamber of Commerce (1)
- (Q8_8) Arts groups (1)
- (Q8_9) Historical groups/societies (1)
- (Q8_10) Other (please describe) (1) (Q8_10_TEXT) _____
- No collaboration/[missing] (.m)

Q9 As a result of participation in the Geotourism Project, has your organization implemented any of the following sustainability practices? (please check all that apply)

- (Q9_1) Reduction in water use (1)
- (Q9_2) Reduction in energy consumption (1)
- (Q9_3) Reduction in waste (1)
- (Q9_4) Started or improved a recycling program (1)
- (Q9_5) Hired local workers (1)
- (Q9_6) Purchased local products and supplies (1)
- (Q9_7) Purchased eco-friendly office or cleaning supplies (1)
- (Q9_8) Purchased décor materials that reflect the Crown of the Continent's unique culture and heritage (1)
- (Q9_9) Other (please describe) (1) (Q9_9_TEXT) _____
- (Q9_10) No sustainability practices implemented (1)
- (Q9_11dummy) My organization already implements sustainability practices. They are not a result of the Geotourism Project. (1 = already implements not as a result, 0 = everything else)
[missing] (.m)

Q10 As a result of participation in the Geotourism Project, does your organization participate in any of the following stewardship activities? (please check all that apply)

- (Q10_1) Financial or in-kind donations to organizations working on environmental issues (1)
- (Q10_2) Volunteer time to organization working on environmental issues (1)
- (Q10_3) Partnerships with organizations working on environmental issues (1)
- (Q10_4) Leading training programs in natural resource conservation or management (1)
- (Q10_5) Participation on boards of environmental organizations (1)
- (Q10_6) Other (please describe) (1) (Q10_6_TEXT) _____
- (Q10_7) No participation (1)
- (Q10_8dummy) My organization already participates in stewardship activities. They are not a result of the Geotourism Project. (1 = already implements not as a result, 0 = everything else)
[missing] (.m)

Q11 As a result of participation in the Geotourism Project, has your organization increased any of the following: [missing .m]

	A great deal (1)	Somewhat (2)	Not at all (3)	I don't know (.i)
Number of visitors (Q11_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of visitors who come to experience the uniqueness and character of the region (Q11_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitor spending (Q11_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Length of visitor stay (Q11_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Repeat visitors (Q11_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referral visitors (Q11_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitors who found your organization on the printed Geotourism map (Q11_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitors who found your organization on www.crownofthecontinent.net (Q11_8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q11_SCORE (1-15); a composite of Q11_1, 11_3 through 11_6

Q12 Does your organization track the impacts of the Geotourism Project on financial performance?

- Yes (please describe) (1) _____
- No (0)
- I don't know (.i)
- [missing] (.m)

Q13 Has your organization identified revenue specifically attributed to the Geotourism Project?

- Yes (please describe) (1) _____
- No (0)
- I don't know (.i)
- [missing] (.m)

The goal of Geotourism is to promote tourism that sustains or enhances the geographical character of a place – its environment, culture, aesthetics, heritage, and the well-being of its residents. Please consider this information as you answer the following question.

Q14 Has your organization integrated Geotourism goals into any of the following: (please check all that apply)

- Business plan (1)
 - Marketing plan (2)
 - Strategic plan (3)
 - Organizational mission, vision and values (4)
 - No organizational documents created (5)
 - None of the above (6)
- [missing] (.m)

Q14_dummy: 1= yes for any of the first four, 0= no integration into plans, .m = missing or N/A

Q15 How often do visitors ask/talk about the Geotourism Project?

- Very Frequently (1)
 - Frequently (2)
 - Sometimes (3)
 - Rarely (4)
 - Never (5)
- [missing] (.m)

Q16 What kind of impact has the Geotourism Project had on your organization?

- A significant impact (please describe) (1) _____
 - Somewhat of an impact (2)
 - A little impact (3)
 - No impact (4)
- [missing] (.m)

Q17 Would you add, change, eliminate or improve anything about the Crown of the Continent Geotourism Project? Is there anything else you would like to say?

Appendix C: Survey Analysis

Sierra Nevada Regressions

Q16: Overall Impact

Variable	p-value	Interpretation
Q3, awareness of involvement	.015*	Those aware that they are involved in the program will report a higher perception of overall impact than those unaware of involvement, all other variables held constant.
Q6, visitor education as a result of Geotourism	.001**	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher perception of overall impact, all other variables held constant.
Q7, advertise participation	.047*	Organizations that advertise participation in the Geotourism program will report a higher perception of overall impact than those that do not advertise, all other variables held constant.
Q9, sustainability practices	.074	Those sites that already implement sustainability practices will report a lower perception of overall impact than those who implement sustainability practices as a result of their involvement in the Geotourism project, all other variables held constant. The p-value shows suggestive but inconclusive evidence.
Q10, stewardship practices	.106	This variable is not statistically significant.
Q14, incorporation into documents	.000**	Organizations that have integrated Geotourism goals into their planning documents will report a higher perception of overall impact than those organizations that do not, all other variables held constant.

N = 109; Prob > chi2 = .000; pseudo R2 = .3171

Q4_1: Understanding of the culture of the region

Variable	p-value	Interpretation
Q3, awareness of involvement	.764	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.005**	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher amount of understanding of the culture of the region, all other variables held constant.
Q7, advertise participation	.850	This variable is not statistically significant.
Q9, sustainability practices	.035*	Those sites that already implement sustainability practices will report a lower amount of understanding of the culture of the region than those who implement sustainability practices as a result of their involvement in the Geotourism project, all other variables held constant.
Q14, incorporation into documents	.014*	Organizations that have integrated Geotourism goals into their planning documents will report a higher amount of understanding of the culture of the region than those organizations that do not, all other variables held constant.

N = 76; prob > chi2 = .000; pseudo R2 = .1773

Q4_2: Feeling of pride in the region

Variable	p-value	Interpretation
Q3, awareness of involvement	.382	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.002**	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher amount of feeling of pride in the region, all other variables held constant.
Q7, advertise participation	.534	This variable is not statistically significant.
Q9, sustainability practices	.624	This variable is not statistically significant.
Q14, incorporation into documents	.416	This variable is not statistically significant.

N = 86; prob > chi2 = .0014; pseudo R2 = .1182

Q4_3: Understanding of the region's unique assets and resources

Variable	p-value	Interpretation
Q2, legal status of organization	.485	This variable is not statistically significant.
Q3, awareness of involvement	.116	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.029*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher amount of understanding of the region's unique assets and resources, all other variables held constant.
Q7, advertise participation	.768	This variable is not statistically significant.
Q10, stewardship practices	.112	This variable is not statistically significant.
Q14, incorporation into documents	.514	This variable is not statistically significant.

N = 97; prob > chi2 = .014; pseudo R2 = .0725

Q4_4: Improved resident-visitor relations

Variable	p-value	Interpretation
Q2, legal status of organization	.183	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.003**	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher amount of improvement in resident-visitor relations, all other variables held constant.
Q7, advertise participation	.443	This variable is not statistically significant.
Q10, stewardship practices	.241	This variable is not statistically significant.
Q14, incorporation into documents	.155	This variable is not statistically significant.

N = 80; prob > chi2 = .0002; pseudo R2 = .1390

Q4_5: Attracting visitors who come to experience the character and uniqueness of the region

Variable	p-value	Interpretation
Q3, awareness of involvement	.680	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.047*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher attraction of visitors who come to experience the character and uniqueness of the region, all other variables held constant.
Q7, advertise participation	.540	This variable is not statistically significant.
Q9, sustainability practices	.021*	Those sites that already implement sustainability practices will report a lower attraction of visitors who come to experience the character and uniqueness of the region than those who implement sustainability practices as a result of their involvement in the Geotourism project, all other variables held constant.
Q14, incorporation into documents	.012*	Organizations that have integrated Geotourism goals into their planning documents will report a higher attraction of visitors who come to experience the character and uniqueness of the region than those organizations that do not, all other variables held constant.

N = 72; prob > ch2 = .0001; pseudo R2 = .1798

Q11_1: Number of visitors

Variable	p-value	Interpretation
Q6, visitor education as a result of Geotourism	.005**	If the Geotourism project motivates an organization to start or increase visitor education, that organization will report a higher increase in number of visitors, all other variables held constant.
Q9, sustainability practices	.546	This variable is not statistically significant.
Q10, stewardship practices	.171	This variable is not statistically significant.
Q14, incorporation into documents	.019*	Organizations that have integrated Geotourism goals into their planning documents will report a higher increase in the number of visitors than those organizations that do not, all other variables held constant.

N = 64; prob > chi2 = .0002; pseudo R2 = .1859

Q11_3: Visitor spending

Variable	p-value	Interpretation
Q3, awareness of involvement	.170	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.005**	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher increase in visitor spending, all other variables held constant.
Q7, advertise participation	.328	This variable is not statistically significant.
Q14, incorporation into documents	.355	This variable is not statistically significant.

N = 45; prob > chi2 = .0194; pseudo R2 = .1497

Q11_4: Length of visitor stay

No adequate or statistically significant regression was found for the response variables in question.

Q11_5: Repeat visitors

No adequate or statistically significant regression was found for the response variables in question.

Q11_6: Referral visitors

Variable	p-value	Interpretation
Q3, awareness of involvement	.537	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.031*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher increase in referral visitors, all other variables held constant.
Q7, advertise participation	.129	This variable is not statistically significant.
Q9, sustainability practices	.516	This variable is not statistically significant.
Q14, incorporation into documents	.363	This variable is not statistically significant.

N = 53; prob > chi2 = .0054; pseudo R2 = .1542

Q11_7: Visitors who found the organization on the printed Geotourism map

Variable	p-value	Interpretation
Q2, legal status of organization	.032*	For profit organizations report a lower increase in visitors who found them on the printed Geotourism map than other types of organizations, all other variables held constant.
Q6, visitor education as a result of Geotourism	.087	This variable is not statistically significant.
Q7, advertise participation	.269	This variable is not statistically significant.
Q14, incorporation into documents	.104	This variable is not statistically significant.

N = 47; prob > chi2 = .0044; pseudo R2 = .1941

Q11_8: Visitors who found the organization on the region's Geotourism website

Variable	p-value	Interpretation
Q2, legal status of organization	.261	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.084	This variable is not statistically significant.
Q7, advertise participation	.159	This variable is not statistically significant.
Q14, incorporation into documents	.030*	Organizations that have integrated Geotourism goals into their planning documents will report a higher increase in the visitors who found them on the region's Geotourism website than those organizations that do not, all other variables held constant.

n = 45; prob > chi2 = .0013; pseudo R2 = .2035

Crown of the Continent Regression

Q16: Overall impact:

Variable	p-value	Interpretation
Q6, visitor education as a result of Geotourism	.022*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher perception of overall impact, all other variables held constant.
Q7, advertise participation	.353	This variable is not statistically significant.
Q14, incorporation into documents	.021*	Organizations that have integrated Geotourism goals into their planning documents will report a higher perception of overall impact than those organizations that do not, all other variables held constant.

N = 36; Prob > chi2 = .0006; Pseudo R2 = .2040

Q4_1: Understanding of the culture of the region

Variable	p-value	Interpretation
Q3, awareness of involvement	.277	This variable is not statistically significant.
Q5, general visitor education	.218	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.015*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher amount of understanding of the culture of the region, all other variables held constant.
Q7, advertise participation	.022*	Organizations that advertise participation in the Geotourism program will report a higher amount of understanding of the culture of the region than those that do not advertise, all other variables held constant.

N = 31; prob > chi2 = .0009; Pseudo R2 = .3060

Q4_2: Feeling of pride in the region

No adequate or statistically significant regression was found for the response variables in question.

Q4_3: Understanding of the region's unique assets and resources

Variable	p-value	Interpretation
Q2, legal status of organization	.010**	Non-profit organizations report a lower amount of understanding of the region's unique assets and resources than other types of organizations, all other variables held constant.
Q6, visitor education as a result of Geotourism	.013*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher amount of understanding of the region's unique assets and resources, all other variables held constant.
Q10, stewardship practices	.070	This variable is not statistically significant at the .05 level.

N = 37; prob > chi2 = .0000; pseudo R2 = .3370

Q4_4: Improved resident-visitor relations

No adequate or statistically significant regression was found for the response variables in question.

Q4_5: Attracting visitors who come to experience the character and uniqueness of the region

No adequate or statistically significant regression was found for the response variables in question.

Q11_1: Number of visitors

Q14, incorporation into documents	.012*	Organizations that have integrated Geotourism goals into their planning documents will report a higher increase in the number of visitors than those organizations that do not, all other variables held constant.
-----------------------------------	-------	---

N = 19; prob > chi2 = .0031; pseudo R2 = .2843

Q11_3: Visitor spending

Variable	p-value	Interpretation
Q6, visitor education as a result of Geotourism	.040*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher increase visitor spending, all other variables held constant.

N = 20; prob > chi2 = .0139; pseudo R2 = .2334

Q11_4: Length of visitor stay

Variable	p-value	Interpretation
Q6, visitor education as a result of Geotourism	.008**	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher increase in length of visitor stay, all other variables held constant.

N = 19; prob > chi2 = .0002; pseudo R2 = .4873

Q11_5: Repeat visitors

Variable	p-value	Interpretation
Q3, awareness of involvement	.922	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.037*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher increase in repeat visitors, all other variables held constant.
Q9, sustainability practices	.043*	Those sites that already implement sustainability practices will report a lower increase in repeat visitors than those who implement sustainability practices as a result of their involvement in the Geotourism project, all other variables held constant.

N = 20; prob > chi2 = .0017; pseudo R2 = .5606

Q11_6: Referral visitors

No adequate or statistically significant regression was found for the response variables in question.

Q11_7: Visitors who found the organization on the printed Geotourism map

No adequate or statistically significant regression was found for the response variables in question.

Q11_8: Visitors who found the organization on the Geotourism website

Variable	p-value	Interpretation
Q3, awareness of involvement	.168	This variable is not statistically significant.
Q6, visitor education as a result of Geotourism	.017*	If the Geotourism project motivates an organization to increase visitor education, that organization will report a higher increase in the visitors who found them on the region's Geotourism website, all other variables held constant.
Q9, sustainability practices	.067	This variable is not statistically significant.

N = 24; prob > chi2 = .0006; pseudo R2 = .3688

Appendix D: Interview Questionnaire

1. Tell us about your business (including legal status).
2. Why did your business join the Geotourism project? Has that reason changed?
3. What changes have you seen in your organization that you could attribute to Geotourism, for example increases in:
Understanding of the culture of the region, feeling of pride in the region, understanding of the region's unique assets and resources, improved resident-visitor relations, attraction of visitors who came to experience the character and uniqueness of the region?
4. Does your organization educate visitors about the Sierra Nevada/COTC region? (If yes, more so than before joining the Geotourism project?)
5. Do you advertise to let people know that you're part of the Geotourism program (website, brochures, MapGuides on display, word of mouth)?
6. Do you use Geotourism as a way of differentiating yourself from competitors?
7. Has being involved in Geotourism led you to collaborate more with historical societies, government institutions, tribal communities, visitor bureaus, local businesses, educational institutions, chamber of commerce, arts groups, etc.?
8. Has your business begun participating in any sustainability practices as a result of joining the Geotourism program, like:
reduction of water use, reduction of energy consumption, reduction of waste, started or improved a recycling program, hired local workers, purchase local products and supplies, purchase eco-friendly office or cleaning supplies, purchase of decor that reflects the SN/COTC unique culture and heritage, composting, sharing best practices?
9. Have you begun participating in stewardship activities as a result of Geotourism, like:
donations to environmental organization, offering volunteer time to orgs working on environmental issues, partnerships with organizations working on environmental issues, leading training programs in natural, resource conservation or management, participation on board of environmental organizations?
10. Since becoming a part of Geotourism, have you noticed an increase in any of the following:
number of visitors, type of visitors (come to experience uniqueness of region/greater diversity), visitor spending, length of stay of visitors, repeat visitors, referral visitors, visitors who found your organization on the printed Geotourism map, visitors who found your organization via the Geotourism website?
11. Has being a part of the Geotourism program changed where you get most of your funding?
12. Since becoming part of the Geotourism program have you changed your mission/vision to incorporate principles of Geotourism, like enhancing the environment, local culture, aesthetics, heritage, or the well-being of residents?
13. Does your organization track the impacts of the Geotourism Project on financial performance?
14. Has your organization identified revenue specifically attributed to the Geotourism Project?
15. Do visitors ever mention or ask about Geotourism? How often/what do they say?
16. What kind of impact has the Geotourism project had on your business? What would you add, eliminate, or change about the project?

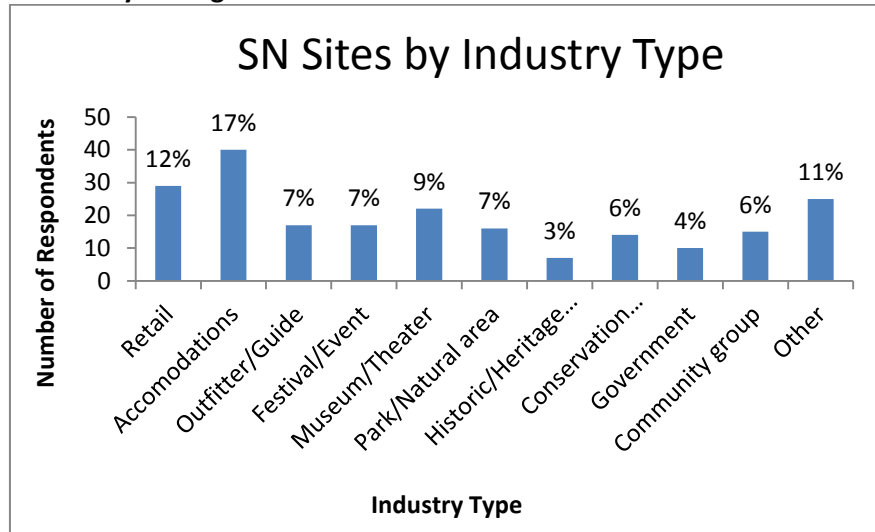
17. What changes do you see in the future of Geotourism that might benefit your business?
How often do you update your business's information on the Geotourism web map?
18. In what ways do you encourage your guests to spend locally? Is this a result of your involvement the Geotourism Project?
19. *Has your business benefited from participated in local conservation organizations like Round Table for the Crown of the Continent, or Travelers for Open Lands?
20. *Has your business participated in any formal or informal sustainable Business Development or workshops? If so, how has this benefited your business?

*Indicates Crown of the Continent interview only.

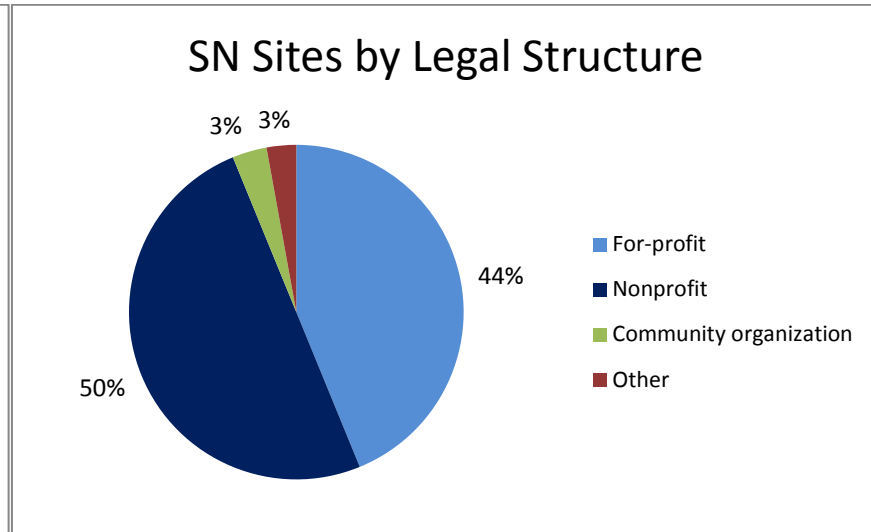
Appendix E: Complete Survey Results

Sierra Nevada 2011 Geotourism Project Survey Results

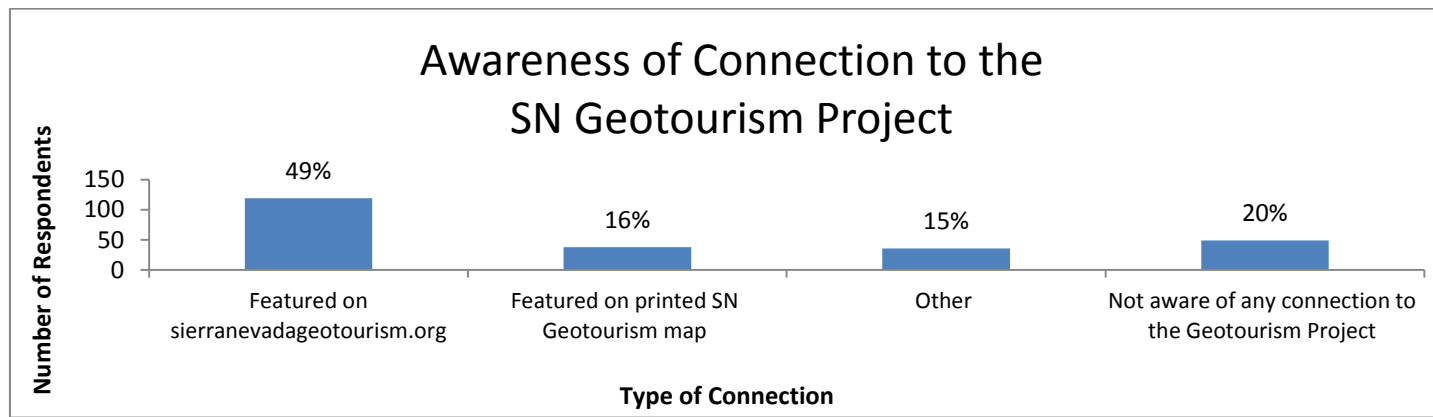
Question 1: Which of the following best categorizes your organization?
status of your organization?



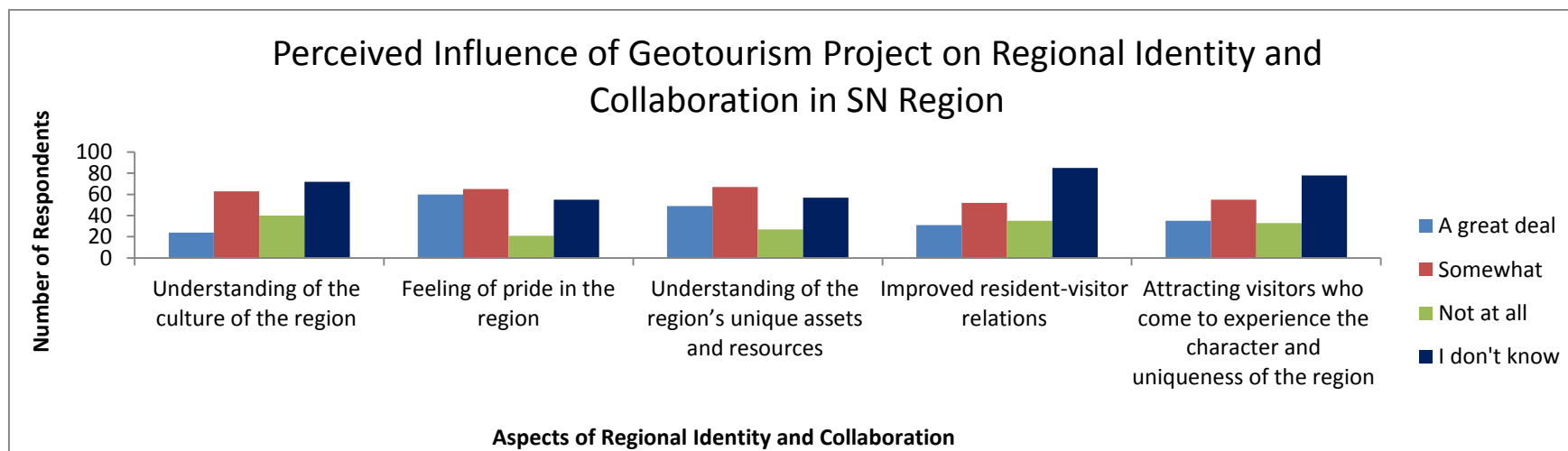
Question 2: Which of the following best characterizes the legal status of your organization?



Question 3: What is your organization's connection to the Geotourism Project in the Crown of the Continent?



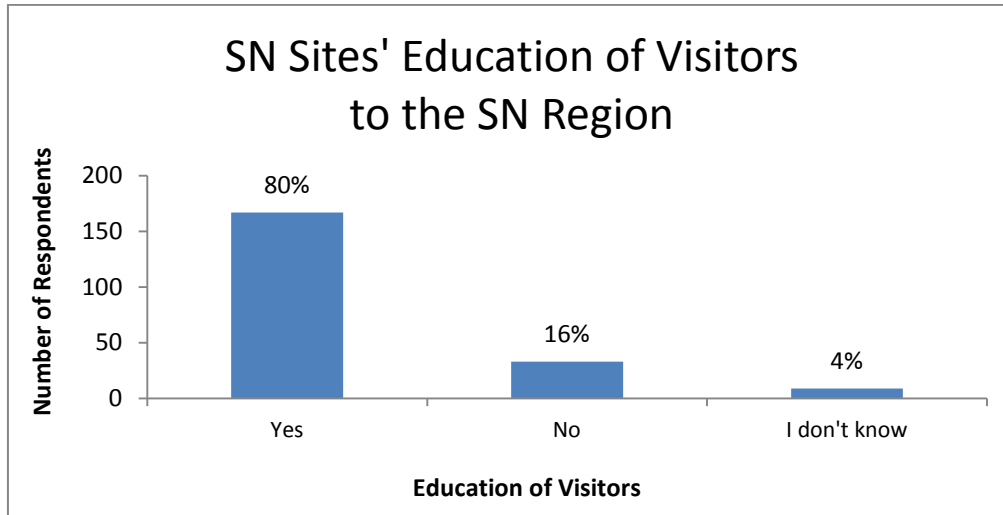
Question 4: As a result of participation in the Geotourism Project, has your organization increased any of the following indicators of social impact?



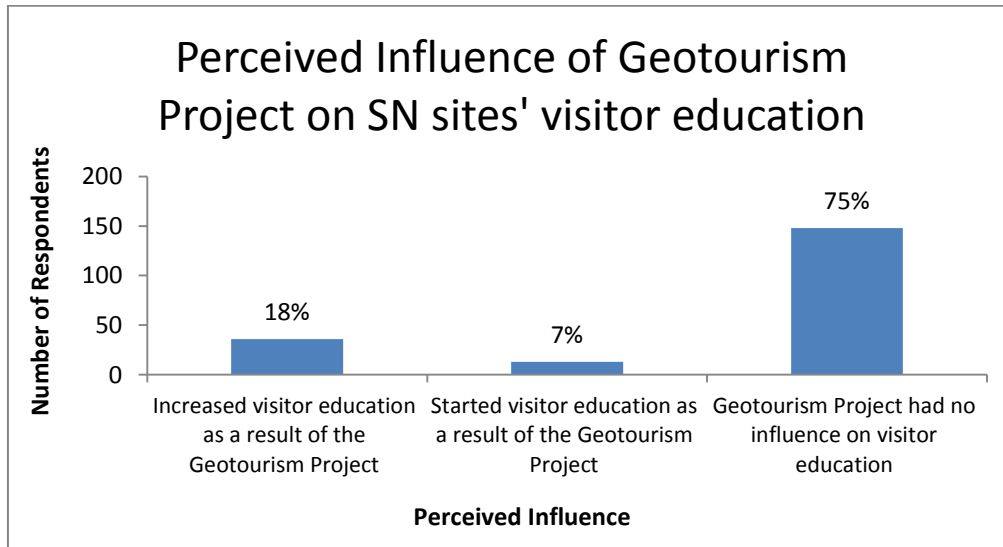
Question 4	A great deal	Somewhat	Not at all	I don't know
Understanding of the culture of the region (n=199)	24	63	40	72
Feeling of pride in the region (n=201)	60	65	21	55
Understanding of the region's unique assets and resources (n=200)	49	67	27	57
Improved resident-visitor relations (n=203)	31	52	35	85
Attracting visitors who come to experience the character and uniqueness of the region (n=201)	35	55	33	78

Question 4	Understanding of the culture of the region (n=199)	Feeling of pride in the region (n=201)	Understanding of the region's unique assets and resources (n=200)	Improved resident-visitor relations (n=203)	Attracting visitors who come to experience the character and uniqueness of the region (n=201)
Min Value (a great deal)	1	1	1	1	1
Max Value (not at all)	3	3	3	3	3
Mean	2.13	1.73	1.85	2.03	1.98
Standard deviation	0.7	0.69	0.72	0.75	0.75

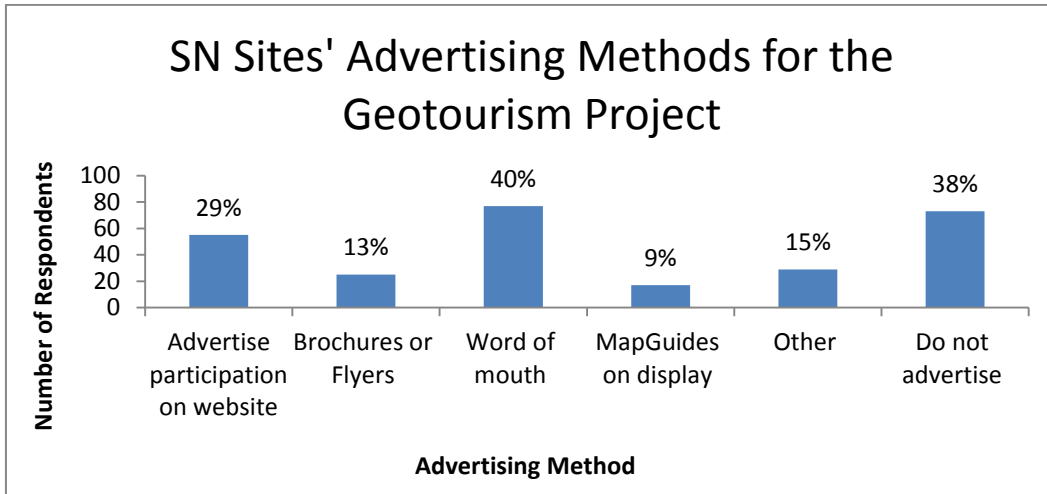
Question 5: Does your organization educate visitors about the Crown of the Continent region?



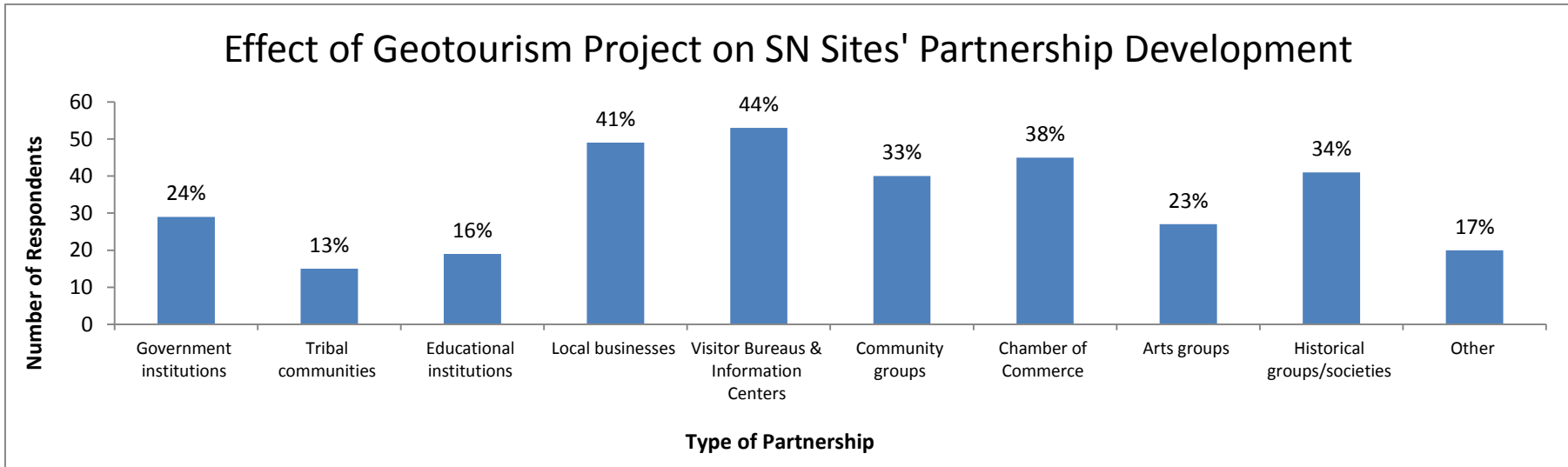
Question 6: Which of the following best describes visitor education at your organization?



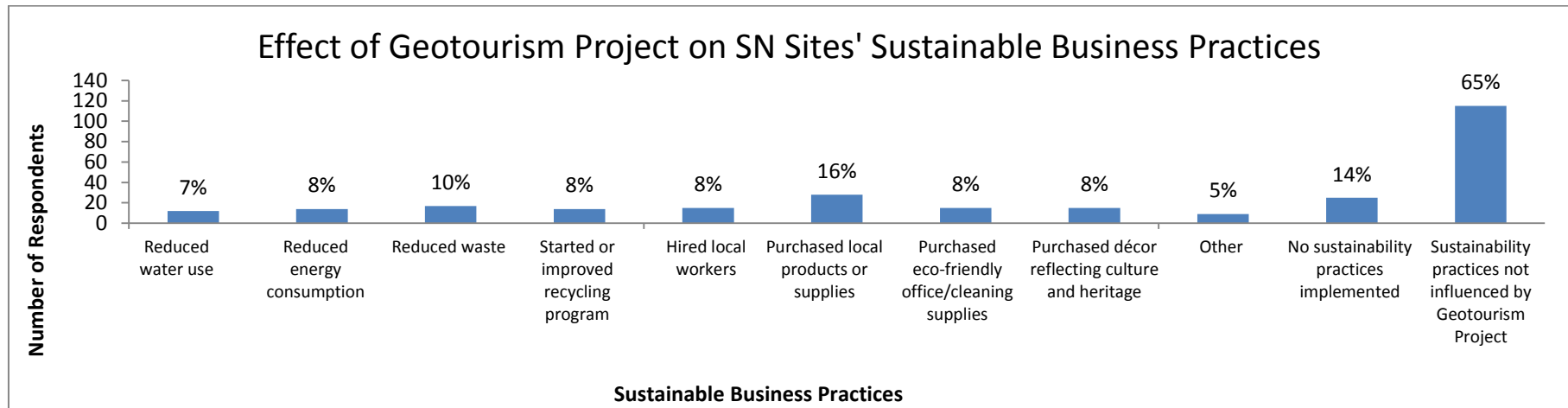
Question 7: How does your organization advertise participation in the Geotourism Project?



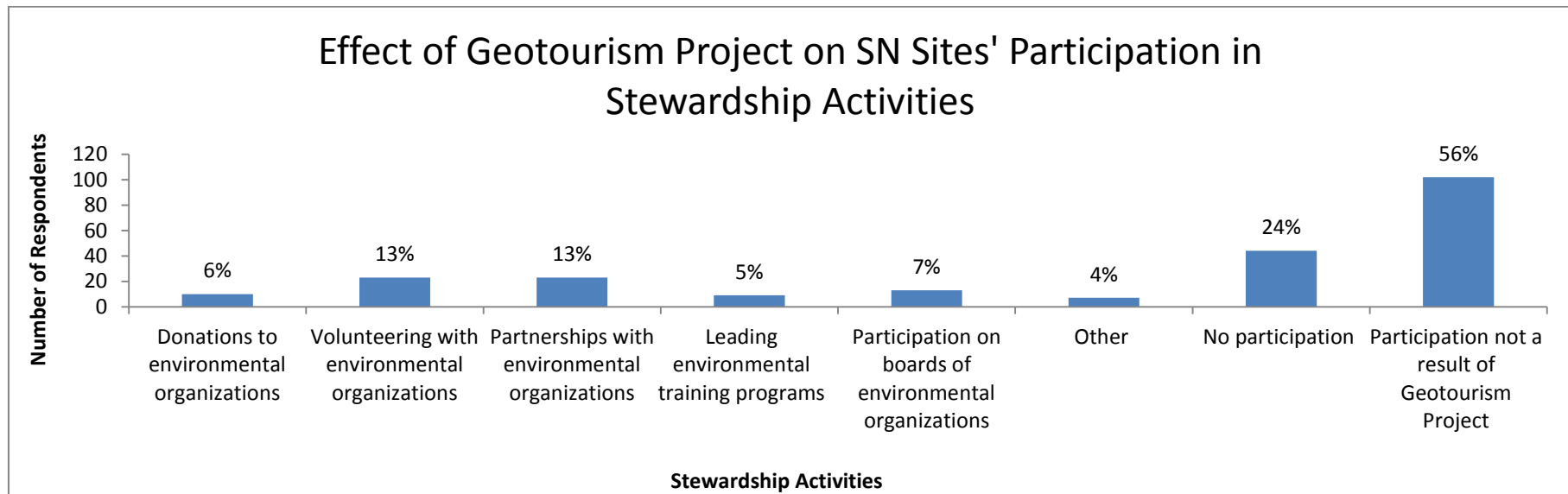
Question 8: Has your organization's involvement in the Geotourism Project fostered more communication/collaboration with any of the following organizations?



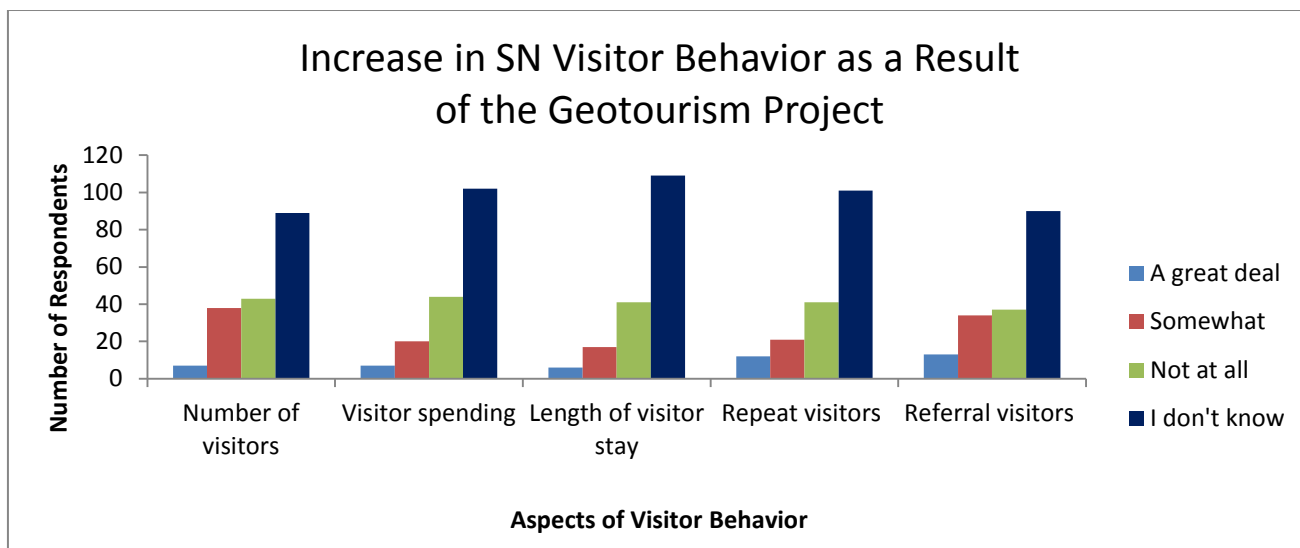
Question 9: As a result of participation in the Geotourism Project, has your organization implemented any of the following sustainability practices?



Question 10: As a result of participation in the Geotourism Project, does your organization participate in any of the following stewardship activities?

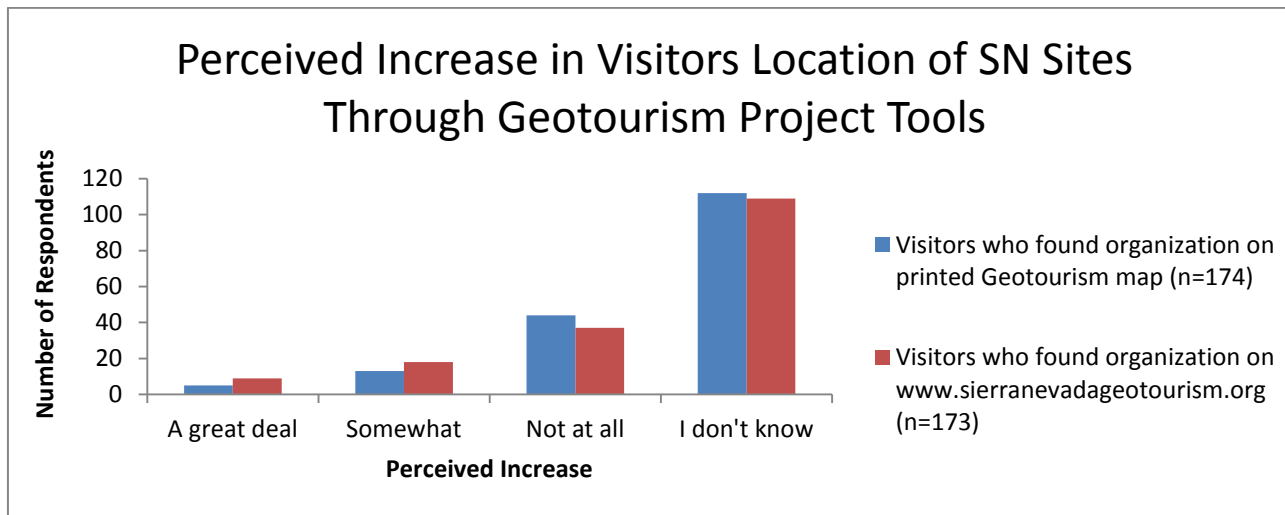


Question 11: As a result of participation in the Geotourism Project, has your organization increased any of the following indicators of economic impact?



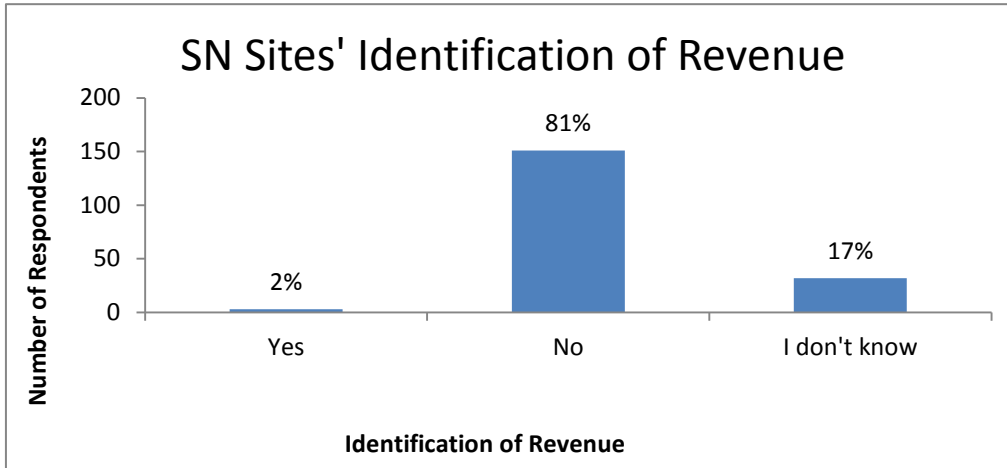
<i>Question11</i>	<i>A great deal</i>	<i>Somewhat</i>	<i>Not at all</i>	<i>I don't know</i>
Number of visitors (n=177)	7	38	43	89
Visitor spending (n=173)	7	20	44	102
Length of visitor stay (n=173)	6	17	41	109
Repeat visitors (n=175)	12	21	41	101
Referral visitors (n=174)	13	34	37	90

<i>Question 11</i>	<i>Number of visitors</i>	<i>Visitor spending</i>	<i>Length of visitor stay</i>	<i>Repeat visitors</i>	<i>Referral visitors</i>
<i>Min Value (a great deal)</i>	1	1	1	1	1
<i>Max Value (not at all)</i>	3	3	3	3	3
<i>Mean</i>	2.41	2.52	2.55	2.39	2.29
<i>Standard Deviation</i>	0.64	0.67	0.66	0.76	0.72

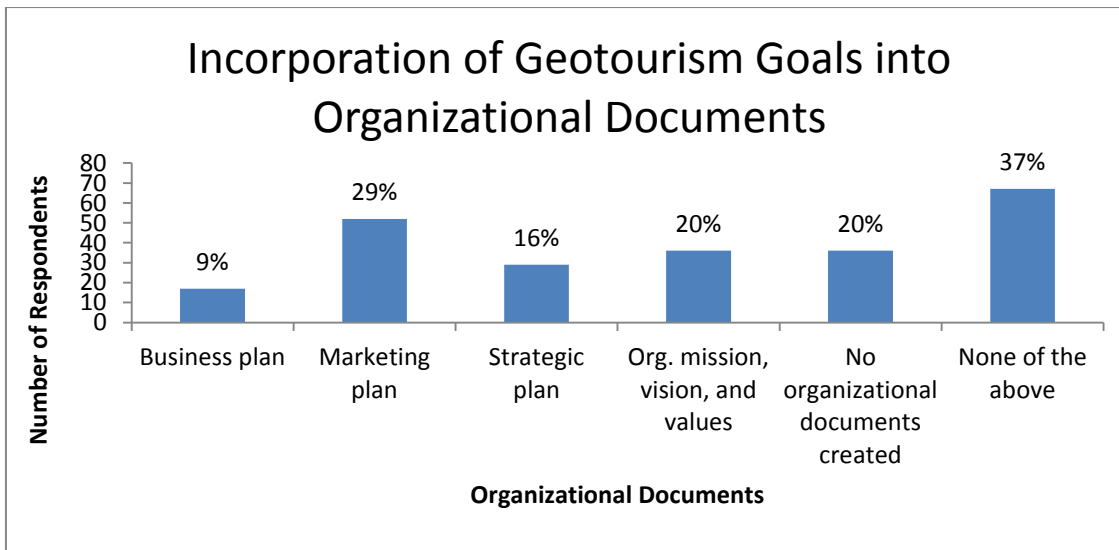


<i>Question11</i>	<i>A great deal</i>	<i>Somewhat</i>	<i>Not at all</i>	<i>I don't know</i>
Visitors who found your organization on the MapGuide (n=174)	5	13	44	112
Visitors who found your organization on www.sierranevadageotourism.org (n=173)	9	18	37	109

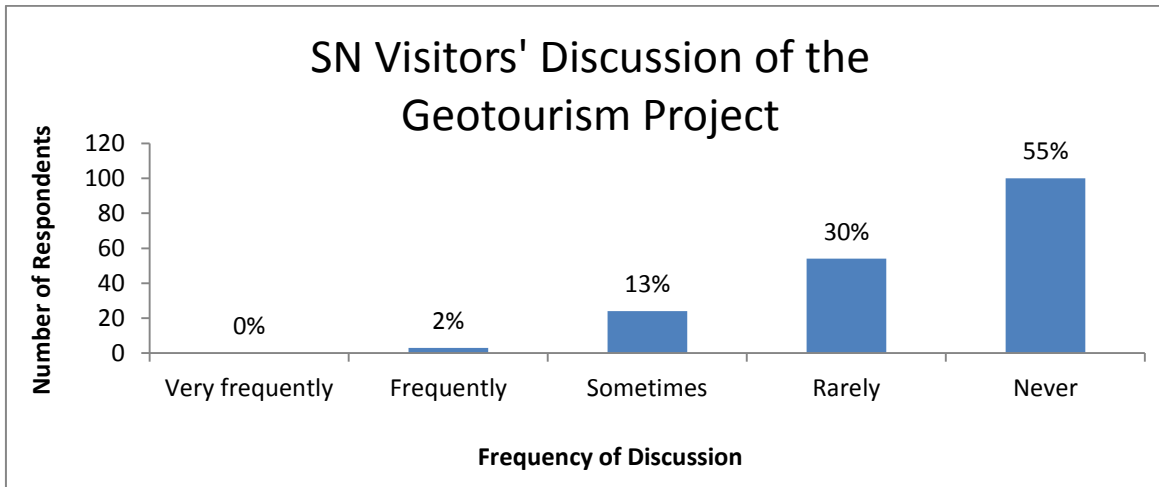
Question 13: your organization identified revenue specifically attributed to the Geotourism Project?



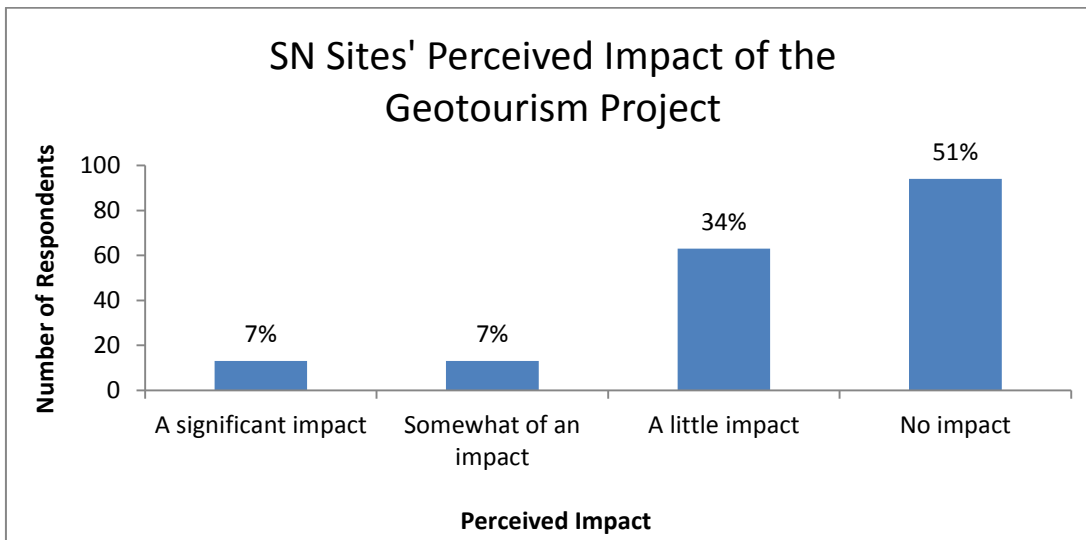
Question 14: Has your organization integrated Geotourism goals into any of the following organizational planning materials?



Question 15: How often do visitors ask/talk about the Geotourism Project?



Question 16: What kind of impact has the Geotourism Project had on your organization?

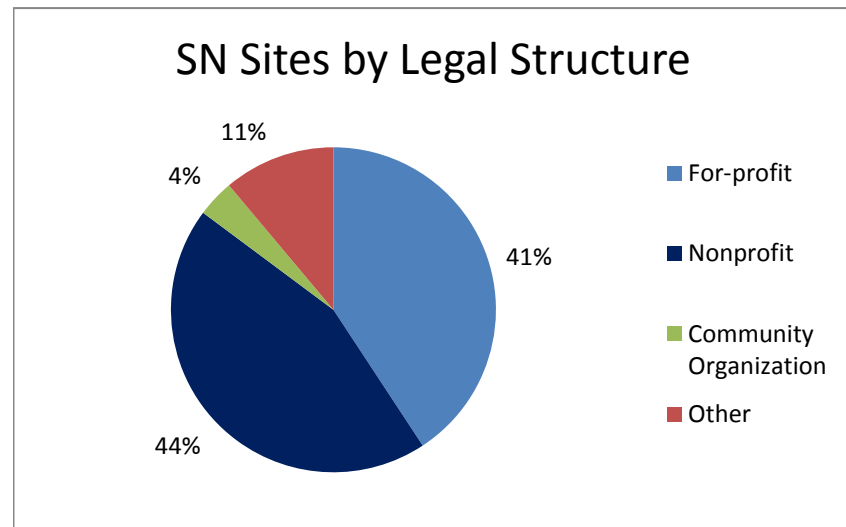
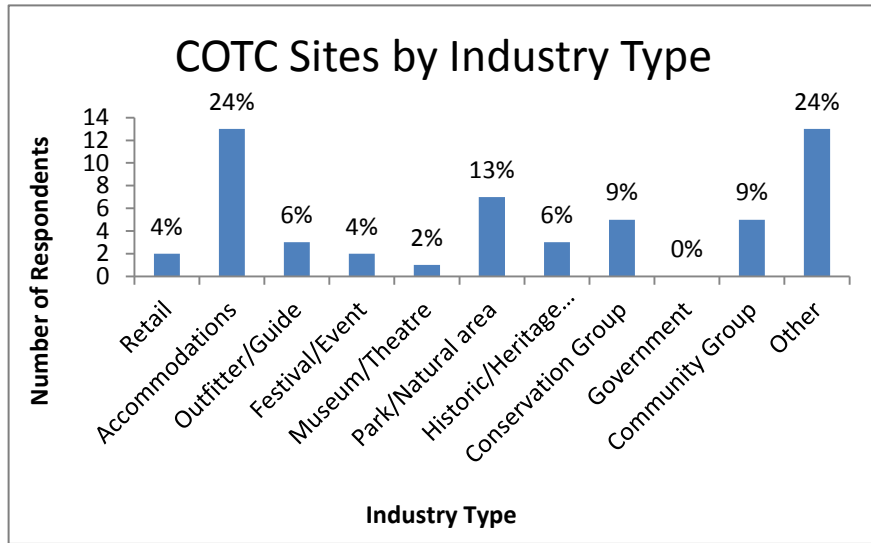


<i>Question 16</i>	<i>N=183</i>
<i>Min Value (a great deal)</i>	1
<i>Max Value (not at all)</i>	4
<i>Mean</i>	3.29
<i>Standard Deviation</i>	.88

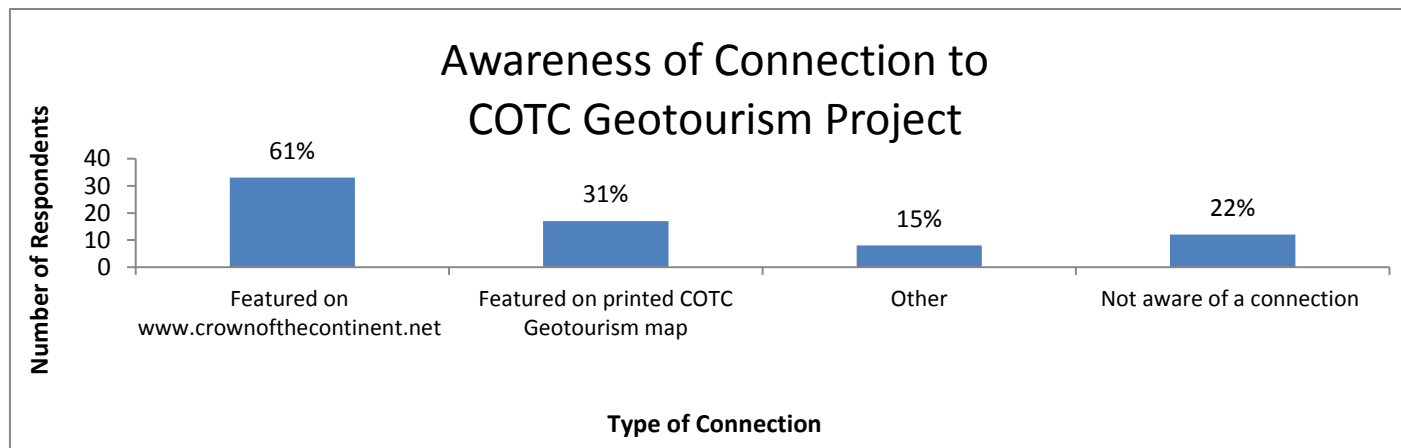
Crown of the Continent 2011 Geotourism Project Survey Results

Question 1: Which of the following best categorizes your organization?

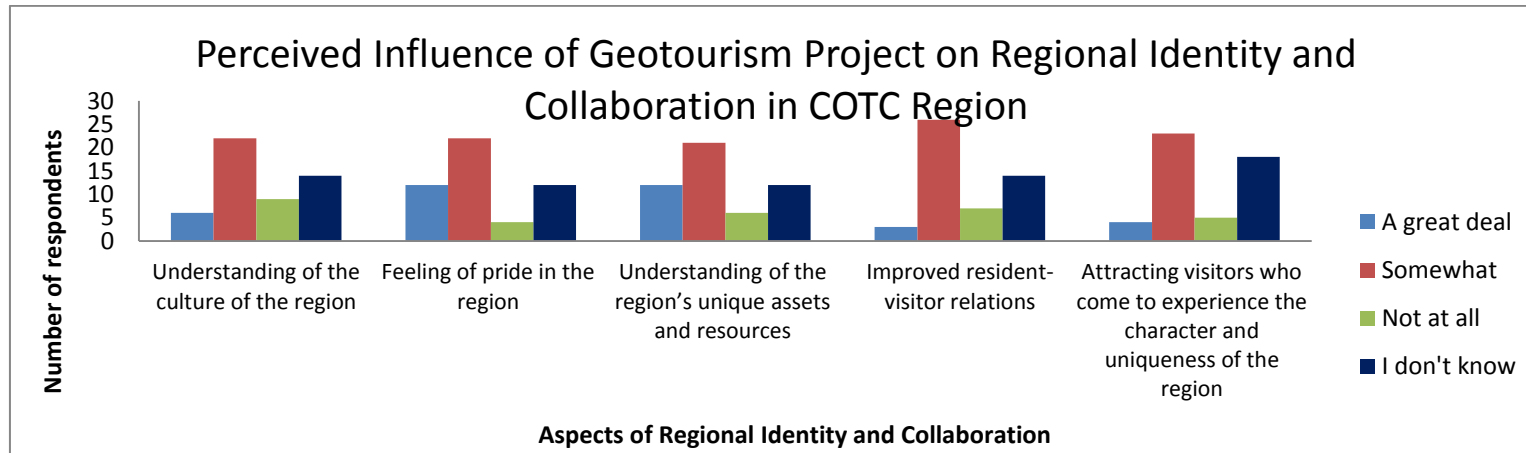
Question 2: Which of the following best characterizes the legal status of your organization?



Question 3: What is your organization's connection to the Geotourism Project in the Crown of the Continent?



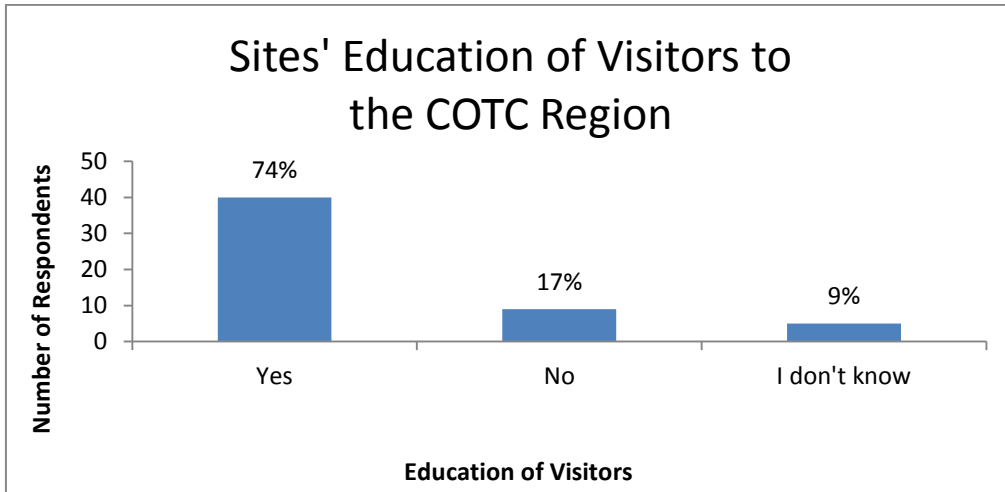
Question 4: As a result of participation in the Geotourism Project, has your organization increased any of the following indicators of social impact?



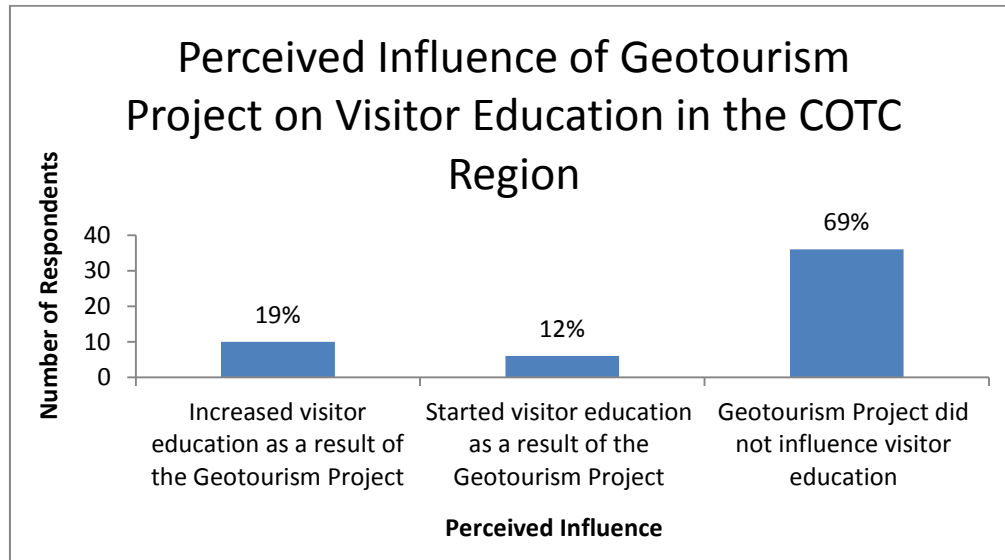
Question 4	A great deal	Somewhat	Not at all	I don't know
Understanding of the culture of the region (n=199)	6	22	9	14
Feeling of pride in the region (n=201)	12	22	4	12
Understanding of the region's unique assets and resources (n=200)	12	21	6	12
Improved resident-visitor relations (n=203)	3	26	7	14
Attracting visitors who come to experience the character and uniqueness of the region (n=201)	4	23	5	18

Question 4	Understanding of the culture of the region (n=199)	Feeling of pride in the region (n=201)	Understanding of the region's unique assets and resources (n=200)	Improved resident-visitor relations (n=203)	Attracting visitors who come to experience the character and uniqueness of the region (n=201)
Min Value (a great deal)	1	1	1	1	1
Max Value (not at all)	3	3	3	3	3
Mean	2.08	1.78	1.85	2.11	2.03
Standard deviation	0.64	0.62	0.67	0.52	0.53

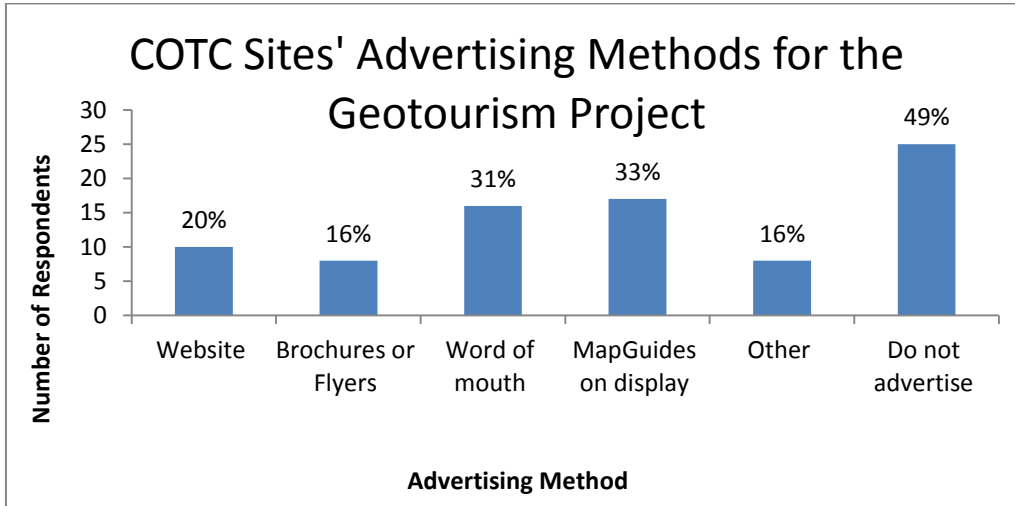
Question 5: Does your organization educate visitors about the Crown of the Continent region?



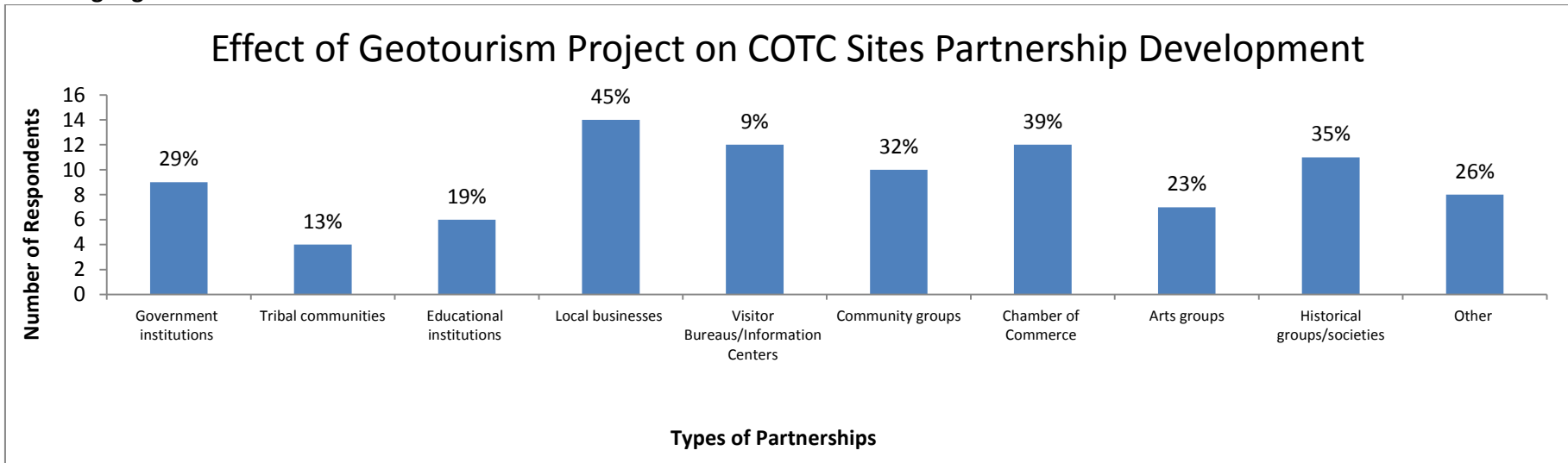
Question 6: Which of the following best describes visitor education at your organization?



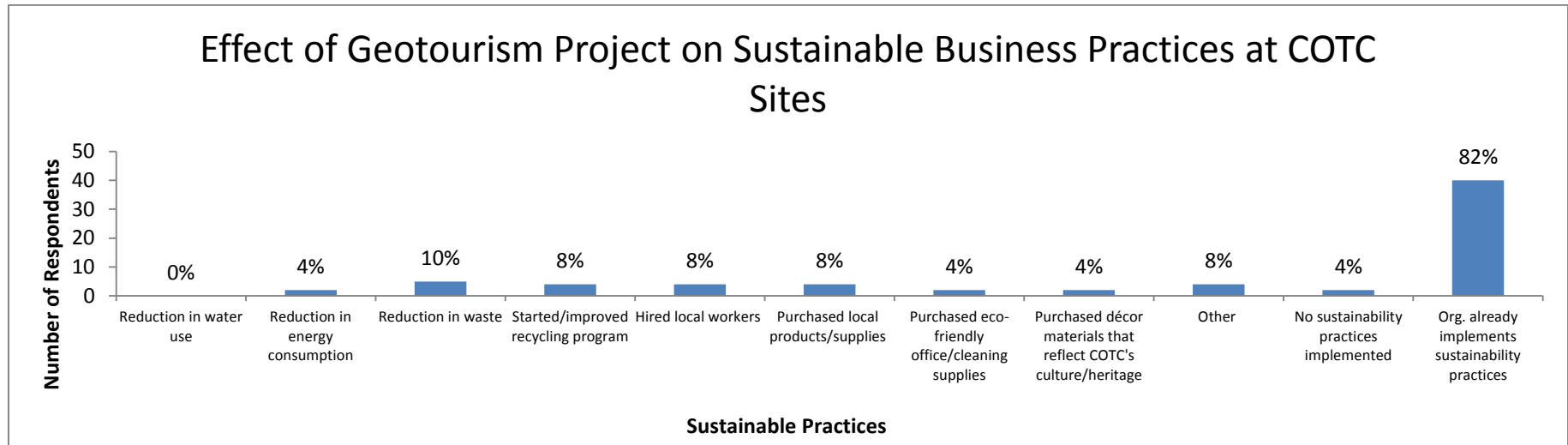
Question 7: How does your organization advertise participation in the Geotourism Project?



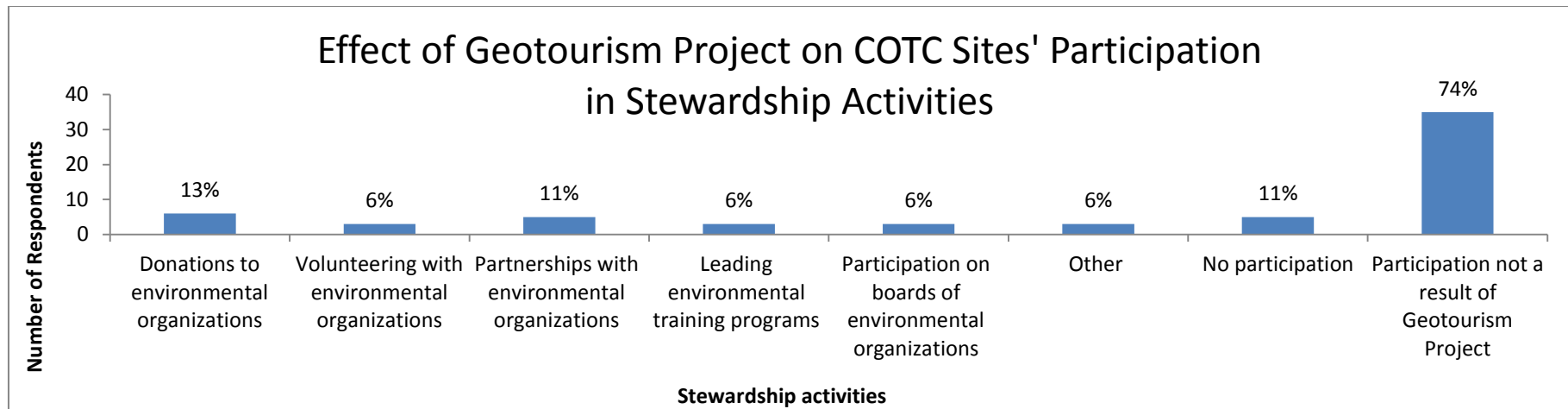
Question 8: Has your organization's involvement in the Geotourism Project fostered more communication and collaboration with any of the following organizations?



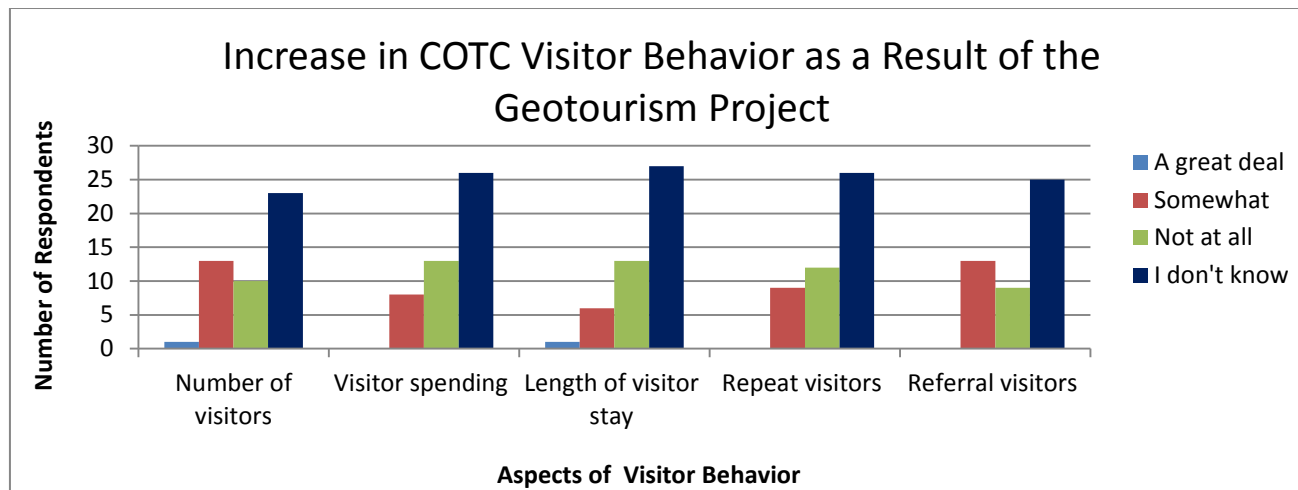
Question 9: As a result of participation in the Geotourism Project, has your organization implemented any of the following sustainability practices?



Question 10: As a result of participation in the Geotourism Project, does your organization participate in any of the following stewardship activities?

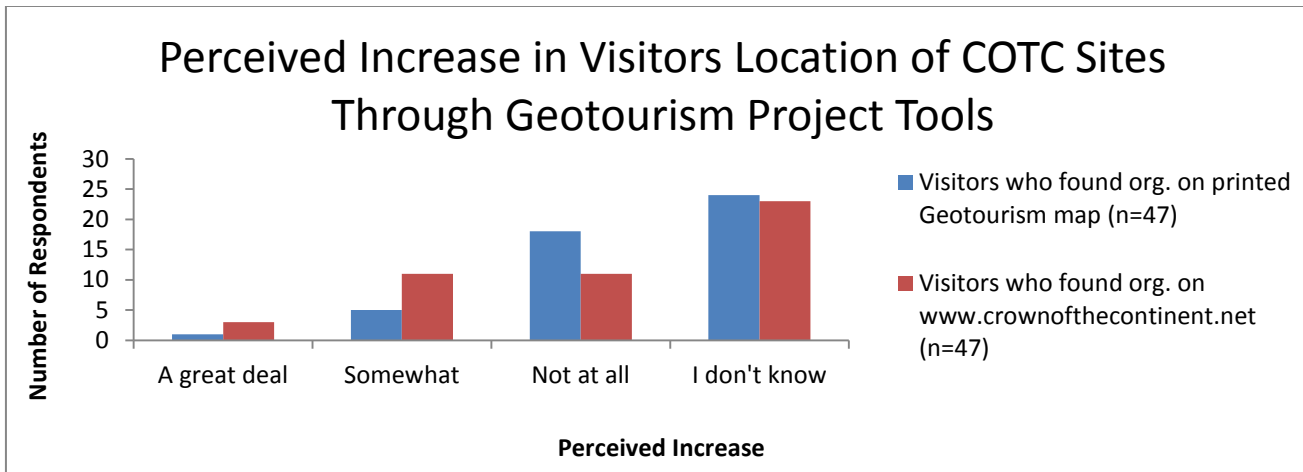


Question 11: As a result of participation in the Geotourism Project, has your organization increased any of the following indicators of economic impact?



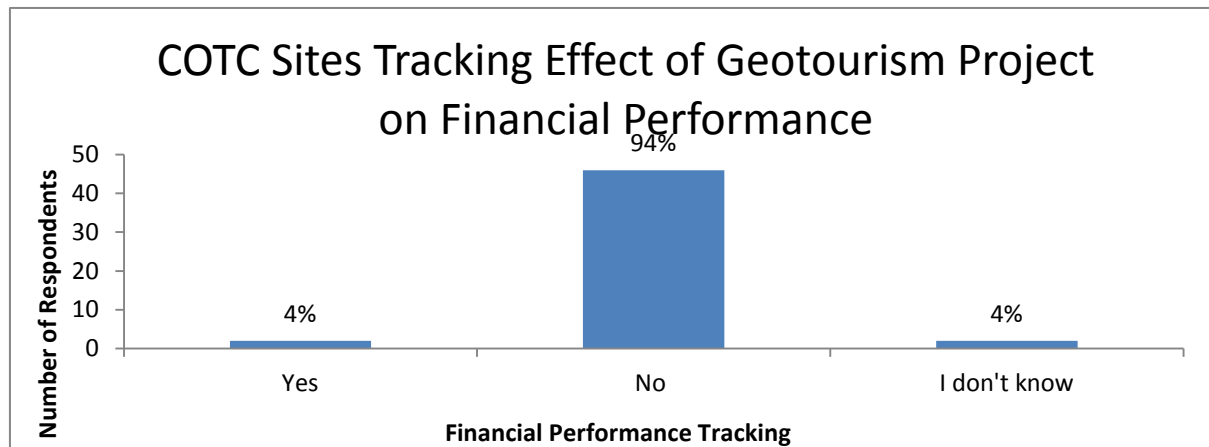
Question11	A great deal	Somewhat	Not at all	I don't know
Number of visitors (n=47)	1	13	10	23
Visitor spending (n=47)	0	8	13	26
Length of visitor stay (n=47)	1	6	13	27
Repeat visitors (n=47)	0	9	12	26
Referral visitors (n=47)	0	13	9	25

Question 11	Number of visitors (n=47)	Visitor spending (n=47)	Length of visitor stay (n=47)	Repeat visitors (n=47)	Referral visitors (n=47)
Min Value (a great deal)	1	1	1	1	1
Max Value (not at all)	3	3	3	3	3
Mean	2.38	2.62	2.57	2.60	2.41
Standard Deviation	.58	.50	.60	.51	.50

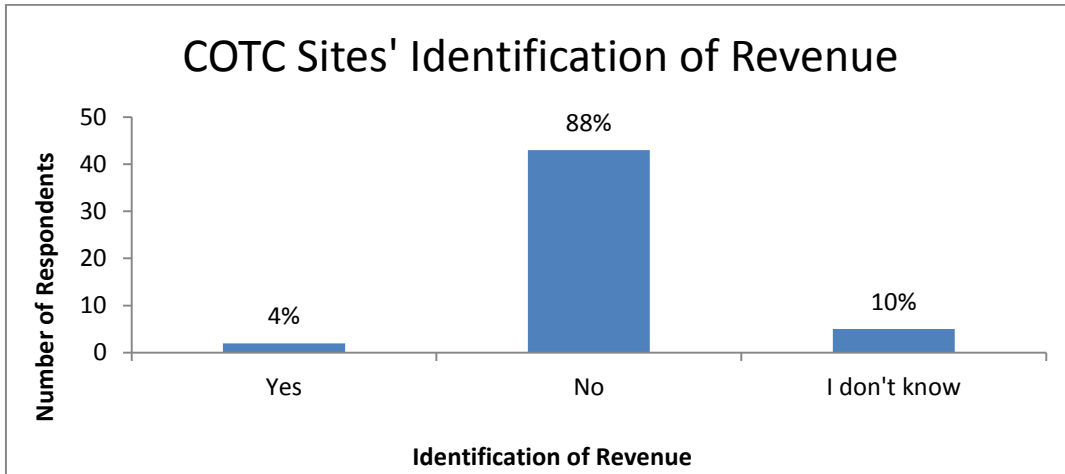


Question11	<i>A great deal</i>	<i>Somewhat</i>	<i>Not at all</i>	<i>I don't know</i>
Visitors who found your organization on the printed MapGuide (n=47)	1	5	18	24
Visitors who found your organization on www.crownofthecontinent.net (n=47)	3	11	11	23

Question 12: Does your organization track the impacts of the Geotourism Project on financial performance?



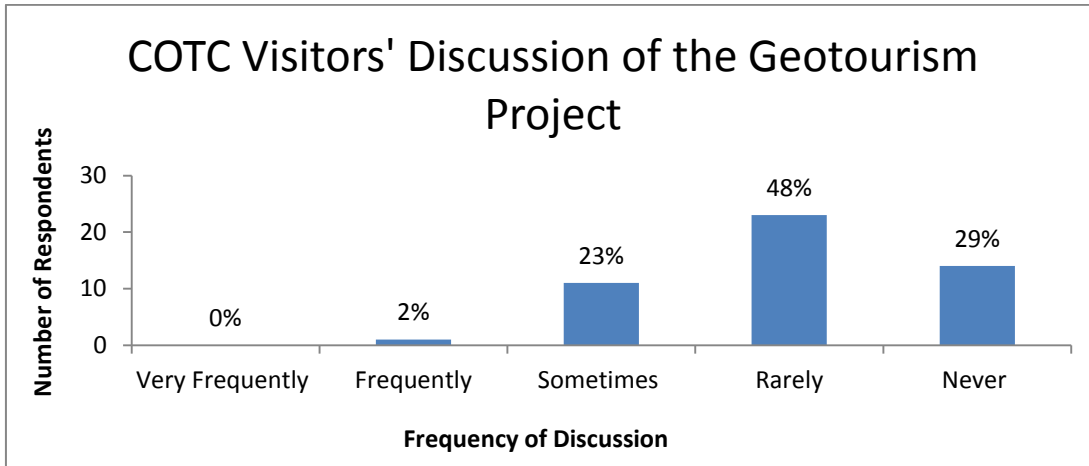
Question 13: Has your organization identified revenue specifically attributed to the Geotourism Project?



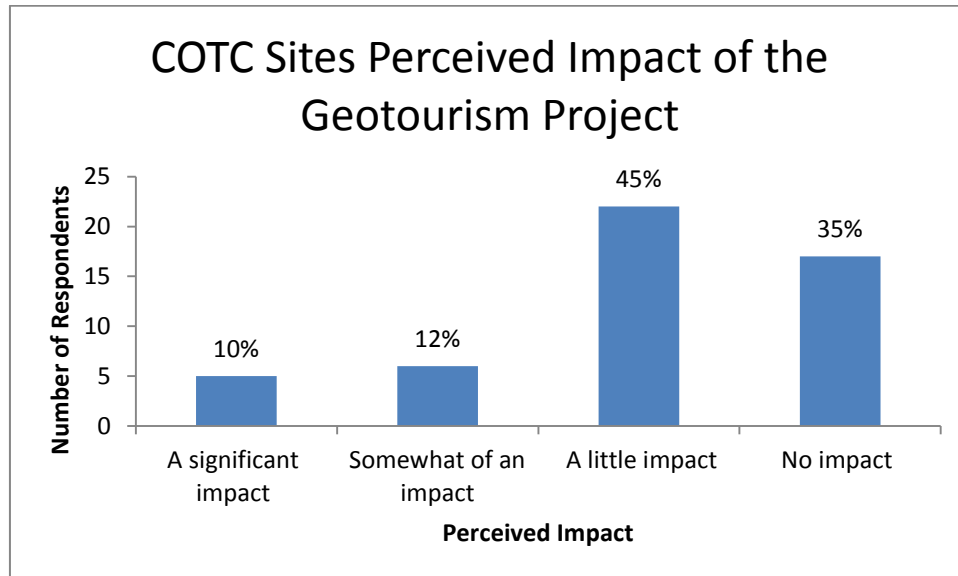
Question 14: Has your organization integrated Geotourism goals into any of the following into organizational planning materials?



Question 15: How often do visitors ask/talk about the Geotourism Project?



Question 16: What kind of impact has the Geotourism Project had on your organization?



<i>Question 16</i>	<i>N=50</i>
<i>Min Value (a great deal)</i>	<i>1</i>
<i>Max Value (not at all)</i>	<i>4</i>
<i>Mean</i>	<i>3.02</i>
<i>Standard Deviation</i>	<i>.94</i>

Appendix F: List of Recommendations

1. Create and maintain a systematic, inclusive method for communication with participating sites
2. Provide a promotional tool-kit
3. Incorporate programming that leverages existing sustainability knowledge and expertise
4. Create a strategic planning model for project guidance and implementation
5. Consider using a formal model to track or record progress toward meeting desired project impact at the regional level
6. Assist participating sites with tracking systems for visitor dynamics and financial performance
7. Communicate to participating sites the importance of educating visitors about the Geotourism Project
8. Encourage participants to incorporate Geotourism Project goals into their planning documents

Appendix G: How to Create an Impact Model

IMPACT MODELS

Focusing Your Nonprofit on Results

A How-To Guide from Third Space Studio

Impact models are visual maps that show how your organization leverages its strengths and connects core strategies to achieve a clear and tangible impact. Businesses have business models and plans that show the connections between their assets, activities, and profit. Nonprofits can have similar models and plans though the bottom line is not about profit and dollars.

Impact models are a picture of how your organization's pieces logically fit together. They can be used to articulate assumptions and clarify and simplify thinking. Many nonprofits use their impact models to keep their various funders and other stakeholders all on the same page. A clearly defined impact model can also point out the priorities for developing additional capacity or help to shape a revenue strategy that logically builds on the organization's program activity.



An impact model includes three major components:

DESIRED IMPACT is the ultimate results of your organization's work. A nonprofit might define its desired or intended impact as the conditions of a particular place, the presence of an economic or social condition in a community or population, the behaviors of a particular group of people, the development of new skills and knowledge in a group of people, a policy or condition of a system or institution, or some other tangible statement of what will be different after your organization's strategic investment of talent, time, and other resources.

Some examples of desired impact:

- A sustainable energy economy for North Carolina
- Iowans are connected to a diverse and preserved landscape and value the importance of land stewardship to the environment, economy, and quality of life of Iowa.
- A healthful and sustainable food system in Ohio.

STRENGTHS/ASSETS are the unique resources and capacities that your organization uses to produce impact and create value. Your nonprofit's strengths and assets distinguish it from other organizations and help you effectively compete for resources, talent, and customers/clients. These are the strengths and assets that are valued by funders as well as clients or customers. Successful nonprofits identify and strategically apply their strengths/assets to frame the strategies they use to generate greater impact.

CORE STRATEGIES are the organized patterns or applications of resources that your organization uses to leverage its strengths into desired impact. A nonprofit may have one or more core strategies. Core strategies are built around an organization's values and theories about what must change to achieve your desired impact. For an example, a group that believes that the desired impact will happen because people use new skills and knowledge might have a core strategy of offering training programs to a target population. A group focused on changing public policy might have a core strategy of organizing the people who will most benefit from the change. Clearly articulating your organization's theory of change helps everyone understand why your nonprofit uses the strategies that it uses.

One of the best ways to create an impact model is to engage a diverse group of stakeholders, including board and staff, in a discussion of each of the pieces and the logic for how it all fits together. This work can be done in a three-hour session with a group as large as thirty, or even more. Detailed instructions are on the pages that follow. For more information or to engage assistance in facilitating such a session, contact Meredith Emmett at Third Space Studio. She can be reached at meredith@thirdspacestudio.com or 919-416-1802.

ENGAGING A GROUP IN CREATING AN IMPACT MODEL

Step 1: Review the Components of an Impact Model (10 min)

Impact models are a new way of thinking for many nonprofit staff and board members. Before engaging a group in creating an impact model, spend a few minutes defining each of the components. You may also want to show some examples. Contact Meredith Emmett for example impact models.

Step 2: Claim Your Organization's Strengths and Assets (45 min)

The first step in creating your organization's impact model is to clearly articulate and claim your unique resources and capacities as strengths. What sets your organization apart from others in your field? Typical nonprofit strengths and assets can be found in the table to the right. It may be helpful to share these examples with the group.

Ask each participant to partner with someone that they do not know well. Each pair is responsible for interviewing each other with the following questions:

- What sets apart our organization from others in our field? What makes us unique?

After the pairs have a chance to interview each other (typically about 10 minutes), ask them to write down their statement of the organization's competitive advantage – the most significant strength or asset of the organization, the one that really sets it apart from others – on a large sheet of paper. Ask the pairs to list the other strengths and assets that they identified on large sticky notes – one per sticky.

Then, ask each group for their statement of competitive advantage. Post them all up on a wall. Discuss what has been reported out. Look for common themes. Synthesize if you can into one or two statements.

Second, ask each group for another top strength/asset. After each group has reported out one and the post-it has been stuck on a wall or flipchart, ask groups if they have any that are similar to the ones that have been posted. Cluster the similar ones together. Ask one group for another and then look for similar ones among the whole group, form another cluster. Repeat until all the strengths/assets have been reported and clustered.

Review the statements of competitive advantage and the clustered strengths/assets with the group. Ask the group if they ring true.

Step 3: Clearly Articulate Desired Impact (45 min)

Divide larger group into an even number of small groups of no more than 5 people each. Ask each group to articulate your organization's desired impact. Remind the groups that a statement of desired impact is in the form of nouns with adjectives. Ask each group to share and discuss their ideas about desired impact. After 15 minutes, each group should have a statement written large on a sheet paper. Two questions that may be helpful to frame the group's discussion:

How will we know success when we achieve it?

What does success look like, sound like, feel like?

Once the small groups have formed a statement, have each group partner with another small group. Ask each group to share their statements of desired impact. Building on the two statements, the combined group is responsible for coming up with one statement and writing it on a 11x17 sheet of paper.

After 10-15 minutes, ask the combined groups to report out their statements of desired impact. Post each statement on a wall. Discuss and synthesize the statements. Look for commonalities and differences in the statements.

TYPES OF STRENGTHS ¹	
Asset Advantages	Execution Advantages
<ul style="list-style-type: none"> • A membership base or constituency • Effective program design that produces results • Unique attributes of programs or services such as linguistic or cultural capacity • An accessible location or network of locations • An attractive or specialized building or property that enhances program delivery • A robust, diversified funding base that provides flexibility and stability • Great name recognition and reputation among funders and constituents • Powerful partnerships • A well-connected board of directors • Specialized staff talent 	<ul style="list-style-type: none"> • Lower costs to funders or customers • Greater efficiency in delivering programs or services per dollar spent • Faster delivery of programs or services (e.g., no waiting for service) • Sound marketing and communications that raise visibility and awareness • Better accountability and public reporting

¹ adapted from *The Nonprofit Strategy Revolution: Real-Time Strategic Planning in a Rapid-Response World* by David La Piana

This might also be a good time to review the characteristics of an effective statement of desired impact – see box to the right.

Do not spend a lot of time wordsmithing. The point of this discussion is to identify the similarities and differences. If the group appears to be in agreement, ask for a volunteer to write up the desired impact statement using the materials produced by the group. The volunteer needs to do this before the end of this session.

Step 4: Discuss Your Organization's Values and Theory of Change (30 min)

Before outlining your organization's core strategies, it is useful to have a quick conversation to outline your nonprofit's values and theory of change. Have the group identify the values and beliefs that shape its work. List these on flipcharts.

Step 5: Outline Your Organization's Core Strategies (60 min)

The final piece of the model is core strategies. There are two ways to arrive at core strategies. One is start with a list of existing programs. List these up for everyone to see and engage the group in a conversation:

- What are the common elements of these programs? Are there clusters with our various programs and offerings?
- What outcomes are produced by these programs and how do they generate the desired impact?
- What are our core strategies? What are our consistent patterns of how we apply our resources to achieve impact?

The second way to articulate core strategies is to work backwards. What must change for the desired impact to be real and true? What does our organization, or other organizations, do to create these conditions that will enable our desired change? The conditions that must be present for the desired impact to be real are what your organization needs to pay attention to. What your organization does to create these conditions is your core strategy

These discussions are best launched in small groups of 3-4 people. Divide the larger group up and have them create a picture that shows how your organization connects its strengths and assets to its desired impact. Give each group about 25 minutes to work. And the end of the time, ask each group to post their picture. Have the full group walk around to view each picture, perhaps with a quick overview from the small group. Following the gallery walk, ask the full group for their synthesis of the nonprofit's core strategies. Capture the content of the synthesis on a flipchart or other large paper that everyone can see.

Step 6: Put It Together Into a Visual Model and Check It

The last step is best done by a small group of 2-3 individuals appointed by the larger group. This small group is responsible for taking the ideas and discussion of the full group and creating a visual of the organization's impact model. When the small group has completed their work (which may take a couple of weeks or a few hours), the full group, or the Board of Directors or staff, can test it with the following questions:

- Does the model logically connect strengths, strategies, and desired impact?
- Is there sufficient activity to achieve the desired impact?
- Does the model reflect the organization's values and beliefs about change?
- Are the core strategies reliant on the organization's strengths and assets?
- Does the organization need additional capacity or strengths to effectively deliver its core strategies?

Desired impact is a statement of tangible results in the form of nouns and adjectives.

Desired impact is the expression of changes in:

People (skills, knowledge, behaviors)

Communities

Natural environment

Systems

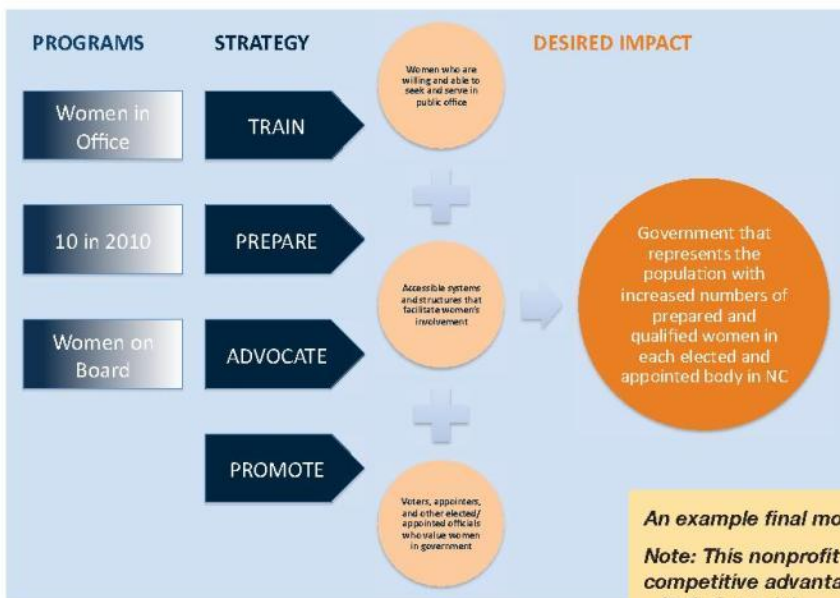
Policies

Institutions

The characteristics of an effective and inspiring statement of desired impact include the following:

- Ambitious and aspirational.
- Inspires the commitment and creativity of all involved.
- Doable within a reasonable timeframe of 10-15 years.
- Ties together all the pieces of the organization.
- Serves a higher purpose than attracting grants and donations.
- Leverages your organization's strengths.
- Important to a wide-cross section of your organization's community.

An example draft Impact Model



An example final model
 Note: This nonprofit did not include their competitive advantage - proven curriculum - in their model.