

Ecotourism Certification Programs: Overview, History, and Impacts

by

Ryan Davila

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved September 2020 by the
Graduate Supervisory Committee:

Ann Kinzig, Chair
Charles Perrings
James Collins
Michael Schoon
Christine Buzinde

ARIZONA STATE UNIVERSITY

December 2020

ABSTRACT

Prior to the COVID-19 global pandemic, ecotourism represented the tourism industry's fastest growing segment with projections estimating that ecotourism would become the world's largest tourism type by 2030. While the tourism industry will need several years to rebound, if historic trends tell us anything, it is that ecotourism will continue to represent a large portion of the overall industry and will continue to grow at a rate that outpaces all other tourism types.

In theory, ecotourism promotes sustainable socioeconomic development while also minimizing negative environmental impacts. Unfortunately, research suggests that this is not always true, and many examples exist of ecotourism causing more harm than good. In order to combat these potential negative impacts, the ecotourism industry has become increasingly reliant on ecotourism certification programs to act as an assessment tool that identifies ecotourism's best practitioners while minimizing false advertising present within the industry. Despite these beliefs in the efficacy of certification, there is a lack of empirical research to actually support certification as an effective assessment tool. Furthermore, little research has been conducted that assesses the impacts that certification itself has on ecotourism businesses (both certified and uncertified) and the local communities dependent on ecotourism.

My dissertation employs a mixed methods design and combines qualitative and quantitative research methods spanning multiple geographic scales to develop an understanding of certification programs as they exist today and to discern the impacts that certification itself may cause for all those either directly or indirectly involved in ecotourism. My findings ultimately suggest that certification reform is needed if

certification programs are expected to be the assessment tool ecotourism experts claim them to be. Specifically, as certification exists presently, there is: no universal guideline or standard for existing certification programs to follow, a disconnect between the advertised benefits certification offers and the actual benefits received, and a lack of market penetration both amongst ecotourists and ecotourism businesses. Each of these must be addressed before certification can live up to its full potential. Furthermore, I found that certification may impact community socioeconomic dynamics, particularly by creating or exacerbating community wealth distribution.

DEDICATION

This dissertation is dedicated to my parents, Ricardo and Sheila, and my siblings, Elsa, Lisa, and Rick. Even when I didn't believe in myself, which is more often than I would care to admit, your support and belief in me was always unwavering and I will forever be grateful.

ACKNOWLEDGMENTS

First and foremost, I am extremely thankful to my advisor, Dr. Ann Kinzig, for guiding me throughout this entire process. There were times when I wasn't confident in my abilities and she was always supportive while pushing me to become a better scientist and critical thinker. I would also like to thank my committee members, Dr. Charles Perrings, Dr. James Collins, Dr. Michael Schoon, and Dr. Christine Buzinde for their expertise and guidance. I could not have completed this dissertation without your constant support and willingness to give feedback.

Thank you to the Ecoservices Lab and all of its members that I have come into contact with during my time at Arizona State. Every single person that I have had the pleasure of getting to know through my time in this lab has been nothing but friendly and helpful and each of you has pushed me to expand my horizons and has influenced the outcomes of my graduate school experience in one way or another. I will always remember our late nights working together and pushing each other to be the best that we can be.

Thank you to the Center for Biology and Society and the staff there for their consistent support of all the Biology and Society graduate students. You all always made us feel welcomed and at home and I am truly grateful for all that you do for each of us throughout our time in graduate school.

Lastly, thank you to the ASU Graduate and Professional Students Association, the ASU School of Life Sciences RTI Office, and National Geographic for providing the funding necessary to accomplish my dreams.

TABLE OF CONTENTS

	Page
LIST OF TABLES	viii
LIST OF FIGURES	x
PREFACE	xi
CHAPTER	
1 INTRODUCTION	1
Tourism Industry Overview	1
History and Trends of Ecotourism	2
Impacts of Ecotourism	7
Overview of Ecotourism Certification.....	12
Existing Gaps in Research and Literature.....	13
Research Questions, Objectives, and Hypotheses	15
Outline of Forthcoming Chapters	17
Statement of Complexity.....	19
2 A COMPREHENSIVE ANALYSIS OF EXISTING ECOTOURISM CERTIFICATION PROGRAMS.....	20
Introduction	20
Methods	32
Results	39
Discussion.....	47

CHAPTER	Page
3 NATIONAL-LEVEL DRIVERS OF TOURISM VISITATION TO ECOTOURISM DESTINATIONS	57
Overview	57
Travel Risks.....	60
Methods	67
Results	77
Discussion.....	84
Concluding Remarks.....	93
4 ECOTOURISM ACCOMMODATIONS AND CERTIFICATION PROGRAMS: VIEWPOINTS AND IMPACTS.....	97
Introduction	97
Methods	111
Results and Discussion.....	118
Conclusions	142
5 ECOTOURISM ACCOMMODATIONS, CERTIFICATION PROGRAMS, AND LOCAL COMMUNITIES.....	147
Introduction	147
Methods	168
Results	179
Discussion.....	215
Concluding Remarks.....	227

CHAPTER	Page
6 CONCLUSIONS AND RECOMMENDATIONS	229
Looking Behind.....	229
Summarizing My Findings.....	230
Ecotourism Certification Program Recommendations.....	238
Looking Ahead.....	242
REFERENCES	245
APPENDIX	
A ONLINE ACCOMMODATION SURVEY	275
B SEMI-STRUCTURED INTERVIEW PROTOCOL	280
C IN-PERSON HOUSEHOLD LIVELIHOOD SURVEY	285
D ARIZONA STATE UNIVERSITY IRB APPROVAL FORMS	291

LIST OF TABLES

Table	Page
2.1. Data Summary by Geographic Scope	39
2.2. Assessment Criteria by Geographic Scope.....	40
2.3. Program Operating Body by Geographic Scope	42
2.4. Data Summary by Participation Cost	45
2.5. Data Summary by Program Operating Body.....	45
2.6. Assessment Criteria by Participation Cost	46
2.7. Assessment Criteria by Operating Body	47
3.1. Travel Sites and Blogs	67
3.2. Ecotourism Destinations Included in Regressions	68
3.3. Predictor Variables with Longitudinal Data.....	69
3.4. Predictor Variables without Longitudinal Data.....	70
3.5. Pearson Correlation Test Results #1	78
3.6. Pearson Correlation Test Results #2.....	79
3.7. Regression Base Model.....	80
3.8. Safety and Security Risk Regression Model	82
3.9. Ecotourism Certification Program Regression Model	83
4.1. Accommodation Survey Respondents by Province	114
4.2. Accommodation Semi-Structured Interview Topics.....	116
4.3. Accommodations by Size and Cost	127
4.4. Reported Changes in Accommodation Visitation	138
4.5. Aggregate Changes in Visitation	140

Table	Page
5.1. Accommodation Matrix	172
5.2. Completed Accommodation Matrix	173
5.3. Household Livelihood Survey Topics	175
5.4. Proportions of Community Households Surveyed.....	177
5.5. Accommodation Characteristics by Community	180
5.6. Accommodation Matrix by Community	181
5.7. Community and Household Characteristics	183
5.8. Household Member Occupation	188
5.9. Accommodation and Restaurant Employment.....	190
5.10. Reported Household Income Across Communities	194
5.11. Household Income by Accommodation Employment	197
5.12. Household Income by Accommodation Certification.....	198
5.13. Household Income by Business Ownership	199
5.14. Changes in Household Income	201
5.15. Total Asset Value by Household Income	205
5.16. Population Growth by Community.....	208
5.17. Change in Job Opportunities by Community	210

LIST OF FIGURES

Figure		Page
1.1.	Ecotourism within a Broader Tourism Context	4
1.2.	Ecotourism's Market Size Relative to Nature Tourism	7
2.1.	Certification Levels by Geographic Scope	43
2.2.	Participation Cost by Geographic Scope	44
4.1.	Online Accommodation Survey's Branched Design	113
5.1.	Community Member Attitudes Towards Accommodations	215

PREFACE

POSITIONALITY STATEMENT

As a non-disabled white male that was raised in an upper-middle class household in the United States, I understand and am aware of the opportunities I have been given to pursue educational and other professional endeavors and how my experiences may represent minimal barriers when compared to others representing different backgrounds. Beyond educational and professional experiences, I also understand that my upbringing afforded me opportunities to travel internationally and see different parts of the world and experience cultures other than my own, a privilege that many do not have the luxury to do.

While I have been able to develop a worldview of mutual respect and acceptance that acknowledges the innate differences that exist between people and cultures globally, I lack an understanding of how my upbringing, or the upbringing of others in the United States more generally, compares to the upbringing of those living in different countries around the world. With only my own experiences to rely on, which are based entirely in an urban setting within the United States, I am aware that I have a limited capacity to truly understand the experiences and challenges of residents of rural settings in developing countries.

In addition to inherent differences that exist between myself and the community members included in this study, another difference worth noting is that I focus this study on the impacts of ecotourism and ecotourism certification programs. In order to do this, I use quantitative and qualitative instruments in an attempt to understand how ecotourism-dependent communities have changed over time. As a person who has never worked in

the service or tourism industries, I lack a personal understanding of the skillset needed and common experiences individuals have that work in these fields. While I attempt to understand these the best that I can through my studies in order to report an unbiased opinion, I am aware that I may have imposed some of my own professional beliefs into the research process, affecting the research outcome to some degree.

COVID-19 ACKNOWLEDGEMENT

While the impacts of COVID-19 and the 2020 global recession on the tourism industry are currently unknown and the future of tourism is unclear, it is very apparent that tourism decreased dramatically in 2020 and was the industry hit hardest by this outbreak. All projections of tourism and ecotourism growth provided in this dissertation were calculated pre-COVID and did not account for any potential major recession. This means that projections provided represent the tourism industry in the pre-COVID era. While COVID has greatly impacted the tourism industry, it is still too early to fully understand these impacts or predict how the tourism industry will rebound in the coming years. Because of this uncertainty, and also because my dissertation focuses primarily on a time period ending in 2018 (pre-COVID), I still utilize and report these projections in order to represent what the sizes of the tourism and ecotourism industries were and the expected growth of these industries under traditional circumstances.

CHAPTER 1

INTRODUCTION

TOURISM INDUSTRY OVERVIEW

The tourism industry as a whole is one of the largest economic sectors in the global economy and is considered the fastest growing industry in the world (CREST, 2018). In 2018, following the United Nation's International Year of Sustainable Tourism for Development in 2017, there were over 1.4 billion international tourists (international overnight visitors). This statistic surpassed the United Nation's World Tourism Organization's 2010-2020 projections for international tourist arrivals two year earlier than expected (UNWTO, 2019). Examining tourism growth trends over the past decade, while it has varied per year, the tourism industry on average has grown 4.2% per year (UNWTO, 2018).

The numbers for domestic tourism are even higher. 2018 data suggest that domestic tourists, or individuals traveling within their home country, numbered between 5-6 billion (UNWTO, 2016). This represents roughly 73% of the overall tourism market, with the largest observed growth in domestic tourism globally occurring in developing nations. These domestic tourists often visit different destinations than their international counterparts, with these alternative destinations including those in rural areas or areas that are more difficult to travel to. This suggests that domestic tourists are vital to the success of tourism in rural areas or tourism areas that are not well known by international tourists (WTTC, 2018).

Examining the global economy in 2018, the tourism/travel industry contributed US\$8.8 trillion, or 10.4% of global gross domestic product (GDP), and employed

approximately 319 million people, or 10% of total employment. These numbers indicate an economic growth rate of 3.9% between 2017-2018, which means that the tourism sector is growing at a pace higher than the global economy (3.2% for global GDP) for the eighth consecutive year (WTTC, 2019a). Although these future projections may be underestimates considering current growth patterns, it is projected that by 2030 there will be 1.8 billion international tourist arrivals annually and that the tourism industry will represent roughly 421 million jobs worldwide (WTTC, 2019b). Furthermore, according to the World Tourism Organization, the tourism and travel industry will contribute approximately US\$11 trillion to the global economy by 2025 (UNWTO, 2011).

HISTORY AND TRENDS OF ECOTOURISM

While different analysts parse the tourism industry in different ways, there are potentially upwards of 40 different subsectors within the tourism industry (Baku, 2013). These range from religious tourism (e.g., a person taking a pilgrimage) to adventure tourism (e.g., rock climbing) to leisure tourism (e.g., sunbathing on a beach). In spite of sustained growth in tourism, many of these subsectors have reached their saturation point globally and have demonstrated a stagnant growth rate over the past decade (Lebe and Vrecko, 2015). Nature tourism, on the other hand, has been consistently growing at an approximate rate of 10-20% per year and is considered the fastest growing tourism segment in the entire industry (Bien, 2008; Dowling and Fennel, 2003).

Nature tourism involves travel in order to experience and enjoy the natural world (Honey, 2008). Ecotourism is a specific segment of nature tourism, and although both are erroneously often categorized together, ecotourism is differentiated from other forms of nature tourism in several ways (Newsome et al. 2002). Ecotourism not only represents a

visit to a natural area, but, broadly speaking, incorporates a set of principles that include benefits to both conservation efforts and people in the host community (Michels, 2012; Self et al. 2010; Ceballos-Lascurain, 1991). Nature tourism focuses primarily on what the traveler is looking to experience and do while ecotourism focuses not only on what the traveler seeks, but also on the socioeconomic and environmental impacts the traveler has on the environment and the surrounding communities at the destination (Honey and Stewart, 2002). This distinction means that ecotourism hopes to limit the negative environmental effects of tourism and maximize the socioeconomic benefits of tourism to the local community.

Another term that has become common in the tourism literature is sustainable tourism. Sustainable tourism is defined loosely as “all types of tourism that are compatible with and contribute to sustainable development” (Liu, 2003). Ecotourism is a sub-category of sustainable tourism because while ecotourism does contribute to sustainable development, sustainable tourism is an umbrella term that can largely be applied to all types of tourism that act in a responsible way and that work to “meet the needs and aspirations of the present without compromising the ability to meet those of the future” (WCED, 1987, Manning and Dougherty, 1995). Based on the placement of ecotourism within sustainable and nature tourism, it can be said that ecotourism, in theory, lays at the intersection of these two broader tourism types and highlights the goals of sustainable development while allowing tourists to explore and experience the natural world (Figure 1.1) (Weaver, 2001).

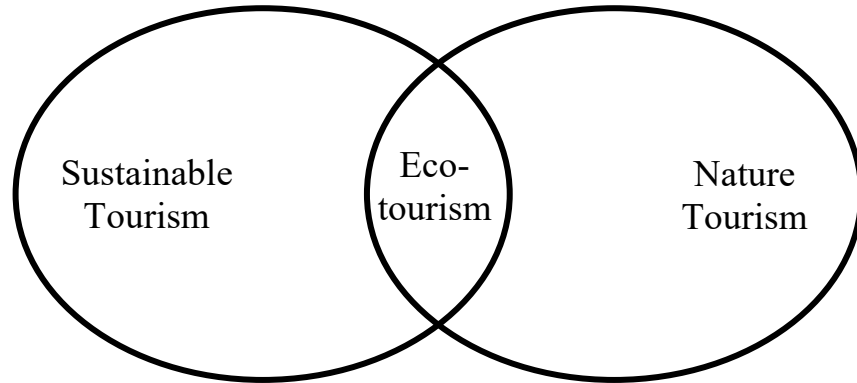


Figure 1.1. Ecotourism exists at the intersection of the larger tourism types, sustainable tourism and nature tourism. Sustainable tourism and nature tourism represent two of the largest tourism types and ecotourism lies at the intersection of both. Ecotourism involves a visit to a natural place and goes beyond nature tourism by contributing to both socioeconomic and environmental sustainable development goals. Not all sustainable tourism is ecotourism, however, in that sustainable tourism can refer to any tourism activity or type, not just those that involve natural places. This graphic should not be taken to represent the relative size of these industries or the proportion of ecotourism within each of them. Rather, it is simply meant to provide a visual that explains the placement of ecotourism within the larger tourism industry.

The term “ecotourism” was first coined in 1983, although forms of ecotourism had existed for decades prior (Ceballos-Lascurain, 1987). Ecotourism became well known in the 1980s and the demand for ecotourism became prominent in the 1990s when the annual growth in demand for ecotourism ranged from 20-34% (Mastny, 2001). Today, ecotourism is growing approximately three times faster than the tourism industry as a whole (Butarbutar and Soemarno, 2012; Crossette, 1998; UNWTO, 2004). According to the World Trade Organization, ecotourism will become the world’s biggest tourism type by 2030 (Jaafar and Maideen, 2012). Due to this projected and continued growth, today, ecotourism is at the core of many nations’ economic development and conservation strategies, particularly for developing nations, and nearly every country is promoting ecotourism in some form (TIES, 2006).

Since the concept of “ecotourism” entered the common vernacular, it has been widely marketed as being a benign form of tourism that has great potential for combining economic development and biological conservation efforts (Ceballos-Lascurain, 1991). However, one of the most common criticisms of ecotourism has been the many existing vague definitions of the term containing a multitude of criteria (or lack thereof). This has led to an overall lack of clarity on what constitutes ecotourism, what does not, and how to best regulate the industry and create a set of standard regulations (Fennell, 2001; Higham, 2007; Diamantis, 1999).

The most commonly used definition of ecotourism, and the definition that I will use, is the one given by The International Ecotourism Society (TIES). TIES defines ecotourism as “responsible travel to natural areas that conserves the environment, sustains the well-being of local people and involves interpretation and education” (TIES, 2015). Expanding on this definition, I consider ecotourism to occur when the following seven principles are met: 1) minimizes negative social, economic, and environmental impact, 2) builds environmental and cultural awareness, 3) provides positive experiences for visitors, hosts, and local people, 4) provides direct or indirect financial benefits for conservation, 5) provides direct and indirect financial benefits and empowerment for local people, 6) raises sensitivity to the host nation’s political, environmental, and social climate, and 7) supports human rights (Higham, 2007; Honey, 2008). Even with this definition and set of principles, one can infer that ecotourism is not a homogenous activity but instead, is a complex yet complementary collection of social, ecological, and economic dimensions that center around sustainability and can look different depending on the location, community, and surrounding environment (Bjork, 2000).

Nature tourism and ecotourism are found in most countries, with 83% of developing nations relying on nature and ecotourism as a main component of their GDP (TIES, 2006). In 2014, the world's protected areas received close to 8 billion visitors, and this is projected to grow well into the future (Balmford et al. 2015). This number, in tandem with the statistic that the domestic tourism market is projected to grow most in developing nations (WTTC, 2018), further demonstrates the current size and potential growth of the existing market for ecotourism (both international and domestic) and the importance this industry will play in the developing world.

Within the tourism sector, it is difficult to determine the exact market size of ecotourism and there has been little effort to gather tourism data on ecotourism as a tourism type separate from nature tourism. However, looking at recent statistics to develop an idea of the size of the ecotourism market, a recent World Travel & Tourism Council research report calculated that wildlife tourism had a total economic contribution of US\$343.6 billion to global GDP in 2018 (WTTC, 2019c). While not all wildlife tourism can be labeled ecotourism and wildlife tourism in no way encompasses all that is ecotourism, this statistic is an indicator that can be used to infer the current potential size of the ecotourism market. Beyond wildlife tourism projections, an International Ecotourism Society projection estimates that ecotourism will account for US\$470 billion in revenues by 2020 (Clayton, 2017; CREST, 2015). Lastly, while numbers and estimations change depending on the source, it is believed that ecotourism is roughly 35% of the nature tourism industry (Figure 1.2) (Joyner et al., 2018). These numbers, however, are all estimations due to the difficulty in segregating ecotourism from nature

tourism. Regardless, they are sufficient in demonstrating both the current and potential economic significance of the ecotourism industry.

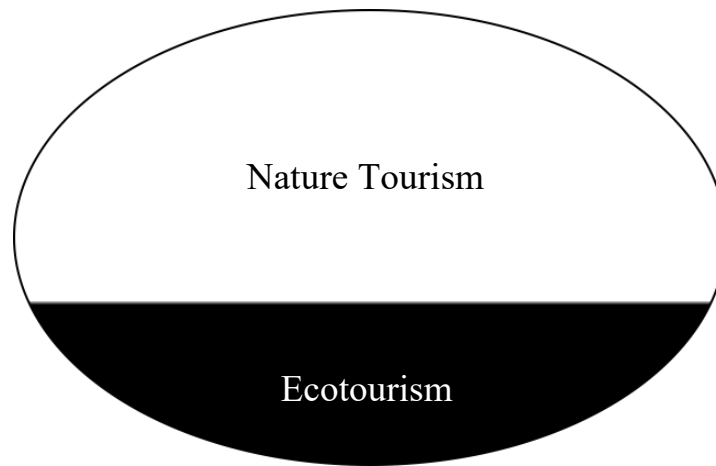


Figure 1.2. Ecotourism accounts for roughly 35% of nature tourism. While estimations on ecotourism’s size are difficult to calculate since the differences between ecotourism and nature tourism change depending on the study, it is believed that ecotourism accounts for roughly 35% of nature tourism (Joyner et al., 2018). Since it is believed that nature tourism represents 20% of the overall tourism industry, it can be inferred that ecotourism accounts for approximately 7% of the tourism industry.

IMPACTS OF ECOTOURISM

Initially, ecotourism was expected to provide a tourism experience that was an alternative to mass tourism, one that minimized negative impacts on natural and social environments in host regions and that contributed to sustainable development goals (Dangi and Jamal, 2016; Cater and Goodall, 1992). Although there are examples of ecotourism destinations that are successfully contributing to the goals that ecotourism represents, research has demonstrated that as ecotourism develops in a region, tension between the goals and outcomes of ecotourism may begin to emerge (Buckley, 2009). As ecotourism develops, it inevitably brings with it a number of associated (direct and indirect) impacts, some of which are negative. These positive and negative impacts of ecotourism have been highly studied, identified, and categorized into four main groups:

social, cultural, economic, and environmental (Su et al. 2014; Boo, 1993; Herbig and O'Hara, 1997). Although the negative impacts of ecotourism can also be applied to mass tourism in general, mass tourism does not claim to combat these consequences while ecotourism is supposed to minimize these negative impacts.

An overview of the environmental impacts of ecotourism shows there is a lack of evidence to support the claim that ecotourism minimizes impacts and maximizes benefits relative to mass tourism (DID, 1999). In fact, many ecotourism experts argue that the potential positive environmental impacts of ecotourism are entirely outweighed by the negative impacts ecotourism brings (Honey, 1999; Rome, 2007). Research suggests that the growth of ecotourism may promote unsustainable development and the destruction of natural resources (McLaren, 2003; Kaur, 2006). A fear among researchers seen across ecotourism and recreation management literature is that ecotourism development leads to a form of recreational succession where what once was small-scale low-impact tourism activities is gradually replaced by larger scale and higher impact tourism activities (Pleumaron, 1993; Wheeler, 1997). With these larger-scale activities and associated increase in infrastructure, since ecotourism depends on the surrounding natural areas, the development of ecotourism increases the potential for destroying the very resource base on which it depends (Gray, 1997; Higham and Luck, 2002). These fears are only exacerbated by the fact that ecotourism often exists in environments that are fragile and highly valued by conservationists and doubt exists concerning whether or not conservation interests are adequately served through ecotourism development (Higham, 2007).

There is mixed evidence that ecotourism actually benefits biodiversity conservation (Milder et al. 2016). Research has demonstrated that the presence of tourists and the experiences provided through ecotourism commonly create harmful contact between tourists and animals, leading to the reduction of biodiversity in the areas surrounding ecotourism businesses (Orams, 2004; Scarpaci et al. 2003). Research has demonstrated that ecotourism negatively impacts biodiversity directly or indirectly through: 1) infrastructure and land use change in protected areas, causing habitat degradation and disruption to normal patterns of wildlife behavior; 2) waste disposal and potential pollution; 3) over-exploitation of other natural resources such as water; and 4) potential harassment of wildlife by visitors (Vaughan, 2000; Milder et al. 2016; Pickering and Hell, 2007).

On the economic front, a major goal of ecotourism is to increase wealth in host countries and communities (Honey, 2008). This, however, appears to not always be the case and research suggests that much of the economic benefit of ecotourism is either retained within the home country of the visiting tourist (through, e.g., travel agencies), retained by large transnational organizations or private companies, or retained by a select few within the host communities. The retaining of profit by tourist-home countries or transnational organizations are examples of the phenomenon known as economic leakage (Scheyvens, 2009; Hodgson and Dixon, 2000; Taylor et al. 2002, Manwa and Manwa, 2014). Research further suggests that the contribution of ecotourism to local economic development is often limited by factors that include but are not restricted to: involvement of few people within the host community, limited earnings and available employment opportunities, and weak linkages between conservation and economic gains (Kiss, 2004).

Lastly, research suggests that as ecotourism increases or becomes more successful at a destination, wealth distribution within a community becomes more skewed (Salafsky, 2001; Wunder, 2000).

From a social standpoint, ecotourism is also capable of having negative socio-cultural impacts on the host region (McGahey, 2012). Ecotourism is supposed to adopt a view of cultural sensitivity. Research has demonstrated, however, that ecotourism can often lead to stresses on communities that host ecotourism, and these stresses can threaten their way of life. These stresses can lead communities to lose various culturally specific meanings or force them to adopt new practices that suit the needs of the tourist, a type of culture commodification (Keogh, 1990; Neumann, 2000). For example, the presence of ecotourism, especially in rural and poor communities, can lead locals to adopt some of the cultural tendencies and mannerisms of visiting tourists (demonstration effect) (Mason, 2003). This adoption of tourist ways of life (often from the Western world) can come in many forms, but one of the most common is when locals in the destination community, often younger generations, aspire to achieve the material standards represented by tourists and in doing so mimic a much more Western style of dress, regardless of how this aligns with the overall culture present in the community or country at large (Bello et al. 2017). While it would be unethical to deny contact between tourists and locals, it is important to acknowledge that ecotourism and these phenomena lead to the dilution of the indigenous culture of the community, often viewed as a negative impact by cultural anthropologists and tourism researchers (Cooper et al. 2008; Fridgen, 1991; West and Carrier, 2004).

Research also suggests that ecotourism can create social and political tension among stakeholders due to ecotourism relying on the use of shared resources and on cooperation between these stakeholders and actors (Kuvan and Akan, 2012; D'Angela and Go, 2009). As is frequent in these types of complex scenarios, stakeholders can range from government agencies to private companies to local community members, and the ability to find commonalities among these stakeholders can often be difficult due to differences in values, leading to discord among parties that can be hard to reconcile (Ayuso, 2006; Simpson, 2009). While it is vital to account for all stakeholder groups in ecotourism decisions, special attention must be given to local communities, the stakeholder group that will experience most of the negative impacts of ecotourism.

Within these local stakeholder groups, it is very often the case that their perceptions of ecotourism are heavily influenced by the direct economic impact that the industry has on their personal livelihoods (Felicetti, 2015). This suggests that local stakeholders are more likely to agree on ecotourism and support the industry if all stakeholders benefit from its presence in the community, even if indirectly (Osman et al. 2018).

Beyond these negative impacts of the presence of ecotourism, there is global recognition and concern that ecotourism principles are being corrupted through a phenomenon known as greenwashing. Greenwashing, through an ecotourism lens, can be explained as false advertising stating that a product or service is environmentally friendly when in reality it does not adhere to ecotourism principles (Honey, 2002). In 2007, a study conducted by TerraChoice Environmental Marketing found that roughly 99% of all products labeled as “green” were at least partially fabricated, with the tourism industry representing one of the worst offenders (Judkis, 2008; McGahey, 2012). Because of the

high prevalence of greenwashing in the ecotourism industry, there is great concern that the industry will lose the trust of tourists and will decline as this trust dissipates.

OVERVIEW OF ECOTOURISM CERTIFICATION

To combat the potential negative impacts of ecotourism and greenwashing, governments and international organizations have worked with the industry to create sets of criteria, tools, and standards that can be used to assess ecotourism operators and attempt to ensure that ecotourism stays true to its goals (Donohoe and Needham, 2006). These have developed into a variety of different initiatives, but the most common approach has been the creation of ecotourism certification programs. These certification schemes seek to measure the outcomes (both positive and negative) that an ecotourism business is providing to host countries, local communities, and the environment, and to recognize the businesses that are best representing the goals and principles of ecotourism (Chamorro and Banegil, 2006). Ecotourism certification is commonly defined as “a voluntary procedure that assesses, audits and gives written assurance that a facility, product, process or service meets specific standards. It awards a marketable logo [and other benefits depending on the program] to those that meet or exceed baseline standards” (Honey and Rome, 2001).

Certification programs for ecotourism began in 1985 (Font, 2002). To date, there are approximately 170 tourism specific certification programs worldwide (DestiNet, 2019). These programs are viewed by many tourism experts as a key tool to help mitigate ecotourism’s negative impacts (Melo and Wolf, 2005; Rotherham, 2005) and to ensure that certified tourism businesses are delivering the most conscientious services possible to their customers (Kozak and Nield, 2004). Because of these potential positive impacts

of certification on the overall ecotourism industry, ecotourism proponents have embraced certification programs as a way to distinguish true ecotourism from false advertisements (Honey and Stewart, 2002). There is caution and skepticism in regard to the effectiveness of certification, however, due to the belief that certification standards and criteria are too low to effectively reduce the negative social, economic, and environmental impacts of ecotourism (Sasidharan et al. 2002; Medina, 2005).

EXISTING GAPS IN RESEARCH AND LITERATURE

Although research on ecotourism and its potential impacts is extensive, there is a lack of agreement among researchers on which regulatory method is best suited to hold ecotourism operators accountable and ensure the industry overall is staying true to its promises (Alonso and Ogle, 2010; Blackman et al. 2014; Buckley, 2009). Ecotourism certification is the most popular method today and while studies on certification exist, many have focused on customer and operator perceptions of such programs and not on the actual outcomes of certification and how it has impacted the ecotourism industry and the communities that depend on it (Aguilar and Vlosky, 2007; Esparon et al. 2013; Rowe and Higham, 2007; Karlsson and Dolnicar, 2016). In terms of outcomes of certification, for this dissertation specifically, I primarily am referring to the impacts that certification can have both on certified and uncertified ecotourism operators (particularly ecotourism accommodations) and the subsequent impacts that this may lead to in the local communities dependent on ecotourism and the surrounding environment.

Examining existing literature, to my knowledge, no studies have completed a comprehensive review of certification programs. The few studies that have compared programs have done so through the lens of either applying standards to an emerging

ecotourism market with hopes of creating a new certification program (Holub, 2015), or with the sole intention of creating a list of existing programs that can be used as a reference for other purposes (Font et al. 2001). No studies exist that have analyzed program standards and the underlying program characteristics that may impact utilized standards and criteria.

Furthermore, while the tourist decision-making and destination choice processes have been highly studied previously, few studies have specifically focused on ecotourists and ecotourism destinations. In addition, even fewer studies have compared the impact that traditional safety and security risks have on an ecotourist's ultimate destination choice to the impacts that environmental indicators of the destination have on this same process (Beh and Bruyere, 2007). This is an important comparison that should be made when considering that ecotourists primarily visit a destination to explore the natural environment present there. Lastly, there is no study that has examined how certification itself impacts these processes and if the existence of certification programs truly influences a tourist's decisions (Sparks et al. 2013).

Continuing to existing literature that examines the impact of certification on communities and individuals other than tourists, few studies exist that address the actual impacts of certification, and in the few that do attempt to address these questions, little effort is made to determine the linkages that exist between the socioeconomic and environmental impacts themselves and the feedback loops that these create. With this lack of existing research on certification outcomes and impacts, "there is insufficient evidence to definitely accept or refute certification as a tool in advancing the sustainable tourism agenda" and, to date, "no studies have examined the alignment between the

social and ecological attributes emphasized by certification schemes” (Esparon et al. 2014).

In addition, few assessments of certification have been performed at the local level and socioeconomic and environmental impacts of certification on smaller scales is unknown (Stone and Wall, 2004; Eshun and Tonto, 2014). Beyond the lack of a local level understanding, limited research exists that identifies the views of different stakeholder groups on the impacts of ecotourism and certification (Kuvan and Akan, 2012). Lastly, the large number of existing certification programs all with varying quality, criteria, and scope has confused customers and tourism operators to the point where visitors do not know which ones to trust (Lebe and Vrecko, 2015; Lubbert, 2001). As more certification programs continue to emerge, this confusion continues to grow and has led to increased greenwashing within the industry (Chen and Ching-Hsun, 2013).

RESEARCH QUESTIONS, OBJECTIVES, AND HYPOTHESES

Existing research gaps suggest that there are still many important questions regarding the effectiveness and legitimacy of ecotourism certification programs and the short-term and long-term benefits/consequences that these programs create for communities and biodiversity. These questions must be addressed through empirical research to determine if certification can help create an ecotourism industry that accomplishes the stated goals of ecotourism.

Certification programs exist for all types of ecotourism businesses: accommodations, tours, attractions, travel agencies, tour guides, etc. Some programs certify all types of tourism operations (some even certify entire destinations) and some focus on specific sectors within the industry. I will focus solely on the certification of

ecotourism accommodations (hotels, lodges, camps, etc.). I have selected accommodation certification because: 1) research has demonstrated that accommodation infrastructure can lead to multiple types of environmental degradation including loss of vegetation and disturbance to wildlife (Koens et al. 2009), 2) accommodations are permanently present in their host community and will seemingly have impacts that are easier to measure compared to other ecotourism operations; and 3) many of the existing certification programs focus on and only certify accommodations (Honey, 2007).

Although an analysis can be completed that assesses the impacts of certification solely on the accommodations themselves (both certified and uncertified), I aim to study the impacts of certification not only on the accommodations, but also on communities, community members, and the surrounding environment. This decision is due to the goals of ecotourism and certification being largely focused on the benefits that ecotourism should provide to a community and conservation efforts. Since few studies exist that examine the impacts of certification on communities themselves, this dissertation is at the forefront of ecotourism certification research at the community-level.

My research questions and their corresponding hypotheses for this dissertation are as follows:

- 1) How do existing ecotourism certification programs compare in terms of evaluation criteria and assessment processes utilized?
- 2) What national-level indicators influence international tourism visitation and tourist's destination choice when specifically assessing nature tourism and ecotourism destinations?
- 3) What are the socioeconomic impacts of ecotourism accommodation certification?

- i) Hypothesis #1: I hypothesize that certification has no impact on communities or community members.
 - ii) Hypothesis #2: I hypothesize that certification will increase visitation to certified accommodations, increasing community prosperity and population as people migrate to participate in a growing ecotourism industry.
 - iii) Hypothesis #3: I hypothesize that increases in community prosperity will be unequal, with most benefits going to accommodation owners and staff of certified accommodations, causing social tension as those that are marginalized get left out of ecotourism and community development initiatives.
- 4) Are changes in certification criteria required to address any potential shortfalls in reaching the intended goals of ecotourism certification? If yes, what changes are needed?

While these are my overall research questions and hypotheses that encompass the entire dissertation, there are many sub-questions that will be addressed through the chapters themselves. These subsidiary questions will be introduced and assessed in each chapter.

OUTLINE OF FORTHCOMING CHAPTERS

The main aim of my research is to assess the socioeconomic and biodiversity impacts of ecotourism certification across geographic scales. In order to accomplish this, I utilized a nested geographic scale mixed methods design and included international-level, national-level and community-level assessments. While the resulting chapters of this dissertation are not organized by this nested design, this mixed methods approach created the opportunity to holistically investigate the impacts of ecotourism certification

and allowed me to incorporate both qualitative and quantitative data into my analyses. The collected data from these methods are organized into five chapters according to my overarching research questions and hypotheses stated above. This organization resulted in chapters that comprehensively assess the impacts of ecotourism certification across geographic scales and chapters that allow for causal linkages to more accurately be identified in these complex socio-ecological systems. The five subsequent chapters of my dissertation can be organized by the overarching research question (see above) each chapter addresses. This organization is as follows:

- Research Question #1
 - Chapter 2 – A Comprehensive Analysis of Existing Ecotourism Certification Programs
- Research Question #2
 - Chapter 3 – National-Level Drivers of Tourism Visitation to Ecotourism Destinations
- Research Question #3
 - Chapter 4 – Ecotourism Accommodations and Certification Programs: Viewpoints and Impacts
 - Chapter 5 – Ecotourism Accommodations, Certification Programs, and Local Communities
- Research Question #4
 - Chapter 6 – Conclusions and Recommendations

STATEMENT OF COMPLEXITY

I understand that social-ecological systems are extremely complex and that human-environment interactions are difficult to quantify regardless of the geographic scale being assessed. I also understand that the socioeconomic characteristics of a community and the biodiversity in the surrounding natural areas are influenced by many local, national, and global factors besides ecotourism and certification.

This dissertation reports the analysis of complex topics with impacts that are difficult to quantify and fully attribute to one cause. Because I study complex topics, the methods and indicators utilized throughout this dissertation were chosen because of their suitability for gathering statically-testable data as well as the existence of a vast body of literature supporting these methods. With multiple factors affecting the socioeconomic characteristics and biodiversity of the studied regions, I am aware that I may find contradictory outcomes and a multitude of interpretations through my analyses, something that is commonly found in tourism literature (Almeida Garcia et al. 2015).

CHAPTER 2

A COMPREHENSIVE ANALYSIS OF EXISTING ECOTOURISM CERTIFICATION PROGRAMS

INTRODUCTION

Chapter Overview

With ecotourism revenue growing three times faster than the revenue contributed by the tourism industry overall (Butarbutar and Soemarno, 2012), ecotourism is projected to represent roughly a quarter of the entire global tourism market by 2030 (Jaafar and Maideen, 2012). Ecotourism is represented in nearly 83% of developing nations' economic development plans and a majority of these countries rely on ecotourism as a major component of their GDP (TIES, 2006). As ecotourism continues to expand and become more popular globally, many question the sustainability of the industry and are concerned with the ability of the industry to stay true to its claims of minimizing environmental impacts while maximizing local community benefits (Lebe and Vrecko, 2015; Morgan et al. 2011).

To combat these perceived dangers of a growing ecotourism industry, tools have been developed globally to promote sustainability and identify tourism operators that best represent ecotourism (Spenceley, 2005). These quality assurance measures began in the mid-1990s and have evolved since (Font and Buckley, 2001; Honey, 2002). Presently, there is a wide array of tools used within the ecotourism industry to address concerns and improve overall quality including: awards of excellence; codes of conduct; and monitoring, evaluation, and certification (Black and Crabtree, 2007). As these instruments have become more developed over time, the attention of many tourism

experts has focused on certification schemes due to the perceived benefits certification offers over other tools in regard to: 1) mitigating the negative impacts of tourism, with an emphasis on environmental benefits (Melo and Wolf, 2005; Rotherham, 2005), and 2) ensuring that ecotourism operators are delivering the best possible services to customers (Kozak and Nield, 2004). As a result, ecotourism certification programs are increasing throughout the world and are the most common approach to ensuring the benefits of ecotourism used today (Hansen, 2007).

While multiple definitions of ecotourism certification exist (Buckley, 2002a), the most commonly cited is “a voluntary procedure that assesses, audits, and gives written assurance that a facility, product, process or service meets specific standards. It awards a marketable logo to those that meet or exceed baseline standards” (Honey and Rome, 2001). A key word in this definition is “voluntary”. No tour operator in any part of the world is required to participate in a certification program or any other quality assurance measure in order to brand themselves under the ecotourism umbrella (Font, 2005). Furthermore, each certifying body has its own set of criteria and standards used to evaluate applicants, suggesting that there may be very little uniformity across certification programs. As the number of ecotourism certification programs continues to increase and as the ecotourism industry continually advocates for using such programs, there exists confusion over which programs are credible, and tourism organizations, tourism operators, and tourists alike are unsure which programs are legitimate and reliable (Rowe, 2011; Lübbert, 2001). To alleviate this confusion and aid in creating a unified certification effort, it is vital that we develop a better understanding of these programs and the criteria and assessment tools utilized (Haaland and Aas, 2010).

To date, reviews of ecotourism certification have been discussed in the literature in one of two contexts -- either through creation of a directory or index of existing programs (Font et al. 2001), or through a comparison of programs (Bien, 2002), neither of which have been done in adequate depth (Haaland and Aas, 2010). While directories of certification programs exist, many of these are not comprehensive. While useful in identifying and learning about specific programs, the intention of these directories is not to compare programs, but rather to be a source of information. While studies exist that have done a comparison of ecotourism certification programs, most have focused on comparing the same 5-10 programs (e.g., Green Globe, Blue Flag, Australia's Eco Certification Program, and Costa Rica's Certificate for Sustainable Tourism), those often considered the standard for ecotourism certification. The comparison is done within a context of applying and creating a certification program to a very specific developing ecotourism market (Holub, 2015). I have not found any studies that compare all ecotourism certification programs and determines what differences, if any, exist between programs and criteria utilized in assessments.

Improved knowledge of ecotourism certification programs is necessary for several reasons:

- 1) to test if certifications programs globally utilize criteria that represent all of ecotourism's social, economic, cultural, and environmental goals;
- 2) to determine if the geographic scale of operation, the inclusion of an application/certification fee, or the operating body (public, non-governmental organization [NGO], or private) impact criteria and assessment procedures used; and

- 3) to inform certification providers regarding best practices and help develop a set of guidelines for certification programs worldwide.

This study, therefore, investigates certification programs and the combination of sociocultural, economic, and environmental criteria each program uses when assessing applicants, and, if differences exist in criteria utilized across programs. If differences exist, this study attempts to further tease out these differences and determine some underlying factors that may be impacting a program's assessment procedures. For this study, my main research question and the subsequent questions that fall within it are as follows:

- How do existing certification programs compare in terms of evaluation criteria and assessment processes utilized?
 - How do factors such as geographic scale of operation, existence of a certification/application fee, or the operating body of the certification program impact the presence or absence of assessment criteria used?

This research thus contributes to our much needed understanding of certification programs by not only determining some of the similarities and differences between programs, but also by examining what underlying characteristics of these programs contribute to the assessment criteria utilized. While this research study cannot determine if certification is truly helping ecotourism achieve its stated goals, it does help us move closer to answering this question by uncovering which sets of criteria are commonly used across programs and the underlying factors that are either promoting, or inhibiting, programs from utilizing an assessment procedure that includes sociocultural, economic,

and environmental criteria. The next section provides a history of ecotourism certification programs, an explanation of the different types of certification programs in existence, and the claims and perceptions of certification in the literature by tourism experts and tourists.

History and Perceptions of Ecotourism Certification

Ecotourism specific certification programs began in 1987 (Font, 2002) and have expanded and diversified greatly over the past 3 decades. To date, there are roughly 178 ecotourism certification programs worldwide (DESTINET, 2019). As with any form of certification or quality assurance label in any industry, these ecotourism certification programs can differ greatly in regard to characteristics such as: tourism market segments certified, criteria and standards used, geographic scale of operation, level of audit and transparency, and whether the program is privately owned and operated or involves some form of government intervention (Buckley, 2002b).

When first created, these programs were most prevalent in the developed world (Sasidharan et al. 2002; Morgan, 1999). However, as time has progressed, and more developing nations have adopted ecotourism as a means for economic development, these same developing nations have begun to utilize certification programs for quality assurance (Rattan, 2015). To date, certification programs can be found in most countries of the world.

When first developed, certification programs were almost entirely process-based and focused primarily on environmental impacts (Tribe et al. 2000). This means that initially, certification was based on environmental management systems (EMS) and applicants to these programs were critiqued solely based on the EMS utilized and how it compared to the program's criteria and standards (Bowman, 2011). Through these

process-based programs, the actual performance of an applicant was not evaluated, and certification was given on the basis of the operations and technology used by the applicant (Krut and Gleckman, 1998). Giving an example in simpler terms, if one of the criteria was water conservation, in these process-based programs, the actual amount of water conserved did not matter, only that the applicant had water conservation strategies and technology in place (Warnken et al. 2005). While having the correct processes and operations in place is crucial, researchers and tourism experts believed that process-based programs were insufficient to induce sustainable tourism practices. Critics of these programs argued that process-based programs were too broad on their own to effectively measure environmental indicators (Synergy, 2000).

With these critiques, there was a shift in ideology and programs began not only adopting a performance-based methodology for evaluating applicants but also understood the need to incorporate social and economic criteria into the evaluation process as well (Honey, 2002). Through this new approach, sociocultural and economic criteria were included in certification programs beginning in 1996. This inclusion meant that for the first time certification programs were cognizant of more than just the environmental goals and impacts of ecotourism (Mensah, 2013). Beyond these new criteria, the adoption of a performance-based approach to evaluation meant that criteria and standards were developed that created performance benchmarks that applying operators must meet in order to be awarded certification under that program (Zairi, 1996). Performance-based programs have their own set of challenges, particularly because many criteria utilized are difficult to measure and are often undefined (Johnson, 2002), but today few strictly process-based programs exist, and more programs are either a combination of process-

and performance-based or are entirely performance-based (Honey, 2003). This is due to the belief that performance-based programs better capture the actual sustainability efforts of the applicant and are more accessible to all tour operators regardless of location or size.

Beyond the evolution from process to performance, there has also been a shift in the geographic scale of operation utilized by certification programs (UNEP, 1998). In the beginning, most programs were international in focus and certified tour operators globally. While these programs still exist and are considered some of the most prestigious and well-known certification programs today, there was growing concern that criteria and standards created at the global level were too vague and/or broad to effectively capture local concerns in the countries and communities that have ecotourism and that these programs were not capable of adequately assessing applying businesses (Epler Wood and Halpenny, 2001). Beyond being too broad in scope, an added layer of concern from researchers was that many of these international-level programs started within the developed Northern Hemisphere, and critics were concerned that these international programs were tailored to address the interests of the developed world rather than addressing the needs of the developing world where ecotourism was and still is rapidly expanding (Sasidharan and Font, 2001; Honey and Rome, 2000).

With these concerns, the industry pushed for the development of more localized certification programs that were tailored to the socioeconomic and environmental conditions of that particular country or region and were created through the involvement of multiple stakeholders (Medina, 2005). As a result, most programs in existence today operate at the national scale. Breaking down existing programs by geographic scale of

operation, there are approximately 69 international programs, 118 national programs, and 72 local programs. While these programs can be found worldwide, most international level programs are headquartered and operated out of the European Union (Hamele, 2002).

National- and local-level programs are more common and are often the program scale of choice by researchers and experts due to the tailored criteria and assessment approach utilized, this does not mean these programs do not have their own shortcomings. First and foremost is simply the relative size of these programs. Most of these programs, especially local ones, often are managed by a handful of employees and a limited budget, making the assessment of applicants difficult and at times impossible (Kahlenborn and Dominé, 2001). Because of these factors, these smaller scale programs rely on a self-assessment completed by the applicant, which suggests that these smaller certification programs are not capable of effectively enforcing their criteria and standards (Haaland and Aas, 2010). Beyond the inability to always verify applicant's claims, the number of these smaller scale programs suggests that few of these programs will be able to attract global attention within the ecotourism market and are more often than not simply convoluting the already crowded certification market (Higgins, 2006).

Transitioning to a focus on the current state of ecotourism certification programs, there are several differences worth explaining. These include: 1) the tourism segments certified under each program (e.g., accommodations, tour guides, travel agencies, locations/destinations, etc.); 2) the monetary cost of participating in each program; and 3) the operation/management model utilized by each program. Each of these will be explained below.

As is common in certification and ecolabel programs in any industry, ecotourism certification programs can certify applicants in any segment of the ecotourism market. Some existing programs are considered general programs and any segment of the ecotourism market can apply for certification under these programs (Davis, 1997). Many of these general programs are those that operate at the international scale. There are exceptions of course and several national and local level programs also certify applicants across the industry. Other certification programs specialize in particular tourism segments and certify businesses in those specific markets, one example being certification programs that certify accommodations only. If a program chooses to focus on a specific market segment, accommodations are often the most popular. These differences in scope simply suggest that general programs have a wider range of criteria or have multiple sets of criteria depending on which tourism segment the applicant belongs to. No research has demonstrated that one type of certification program is better or worse than the other, there is simply just a difference in the overall operation and scope of the program.

Second to market specificity, another large difference between certification programs today is if the programs are privately owned and operated or are government or non-profit managed (WTO, 2002). Beyond being profit-driven enterprises, privately owned programs are generally created for one of two additional reasons. First, privately owned programs are often more lenient than their government-run counterparts and the existence of a privately owned program may delay government involvement in the certification process (Buckley, 2002). Second, privately owned programs are sometimes owned by tourism operators themselves. These programs are created to either provide advantages specifically to those certified under the program or those who operate it

(Kusz, 1997). An additional motive for private certification programs is to establish an alternative revenue stream for those that operate the program (Sasidharan et al. 2002).

For certification programs that are operated by an NGO, while operated and overseen by the NGO, these programs generally differ from privately-operated programs in that NGO-led programs typically have some relation to a government department or agency and are seldom operated entirely independent of governmental influence (Font and Buckley, 2001). While these governmental relations contribute to the overall appeal of NGO-led programs, NGO-run programs also tend to be most applauded by tourism experts due to their inclusion of a wide array of assessment criteria and their dedication to assessing and verifying all applicants prior to awarding certification (Haaland and Aas, 2010; Font and Sallows, 2002). Beyond NGO-led programs with governmental ties, government involvement in certification programs can come in many forms. For some programs, they are entirely managed and operated by a government agency. Others are operated independently but work in tandem with the government and the government has either created legislation that either formally accepts the criteria and standards utilized by the certification program or that formally recognizes the certification program and associates the program with the government (Buckley, 1997).

Privately-operated programs have been criticized for lacking rigorous criteria and standards compared to their government-run counterparts. Many experts call for government involvement to aid in creating more stringent evaluation criteria while also aiding in promoting the certification program to a global audience (Tepelus and Córdoba, 2005). However, while most can agree that government involvement in certification is desired, there is little consensus on whether programs should be entirely government

operated or should be some hybrid of public and private.

One last difference observed amongst programs that is not often discussed in the literature is the cost of participation. Cost here refers to the application and/or certification fee that the program charges in order to participate in the assessment and certification process. While all certification programs require a large time commitment to complete the lengthy application and that in itself is a cost paid by the applicant, for simplicity, cost here is discussed in terms of the monetary fees paid directly to the certifying body in order to participate in that specific program. The cost of participating is often correlated with the geographic scale of operation, with international-level programs often being much more expensive on average than their national- and local-level counterparts (Sharpley, 2001). Examining the range of application or certification fees that these programs charge, some programs, often those on the national or local level, have no application or certification fee. Others, often those operating internationally, have application fees that can be upwards of US\$5,000 and according to the literature, the existence of these application/certification fees represent a barrier to participation for many tourism operators (Bowman, 2011).

Expanding on this idea of fees representing a participation barrier, with fees in place, a certification program is limiting the number of tourism businesses that can apply to these programs. A majority of ecotourism worldwide is small-business enterprises (SMEs) and while these SMEs may be doing all processes and procedures necessary to obtain certification, they often do not have the resources necessary to afford the application or certification fee (Lebe and Vrecko, 2015; Salzhauer, 1991). Beyond influencing a tourism operator's ability to apply to a specific program, the presence or

absence of an application or certification fee also impacts the assessment process utilized to certify applicants (Font, 2002). With a fee in place, certification programs often have more in depth criteria and can afford to send an assessor to the applicant to complete an in-person assessment and determine certification status based on that evaluation. Without a fee, it is often the case that certification programs rely almost entirely on the written application to determine certification and rarely have the funds to conduct in-person assessments of applicants and verify that applications are truthful. This lack of external auditing contributes to the limited credibility of many existing certification programs (Font and Harris, 2004).

Based on this brief overview of ecotourism certification programs, it is clear that there exists a diverse array of programs all utilizing their own specific set of criteria and standards with some being more all-encompassing than others. With the many differences that exist, it is critical that an in depth comparison of present-day programs is completed in order to determine existing similarities and differences between programs and any underlying factors that may be contributing to the observed differences. This study aims to provide this much needed research and deepen our understanding of ecotourism certification.

In summary, this study will assess certification through several lenses to assess how certification programs compare to each other. First and foremost, this study aims to assess the impacts of the geographic scale of operation of a program on: assessment criteria utilized, the operating body of a program, the presence of application/certification fees, and the number of certification levels within the program. Beyond comparing programs by geographic scale, this study also aims to assess how application/certification

fees, and the amount of these fees, impact criteria used by a program as well as how the operating body of a program influences the resulting criteria utilized. Through these comparisons, this study assesses geographic scale of operation and the findings can be compared to previous studies which argue that smaller scale programs truly represent the most comprehensive programs. Furthermore, since fees are often believed to be associated with programs that utilize assessment criteria spanning sociocultural, economic, and environmental indicators as well as often being correlated with the presence of an on-site verification procedure, this assessment of fees allows us to test this belief and determine how fees impact the resulting structure of a program. Lastly, with an analysis of programs by operating body, this study allows us to test if one operating body tends to use a more in-depth assessment procedure over the others. Since the operating body is believed to be related to the resulting quality and enforcement of the certification program, this analysis allows us to explore these relationships and determine if one operating body in particular is preferred.

METHODS

Gathering Ecotourism Certification Program Data

To complete a comprehensive overview of ecotourism certification programs, the first step was to create a list of all known ecotourism specific certification programs. This was accomplished by utilizing the “Certification Quickfinder” on the Tourism2030 portal operated by ECOTRANS, the most comprehensive ecotourism certification tool available publicly today (DESTINET, 2019). While this portal does not list certification programs in a table or list format, it allows a user to geographically visualize the location of certification programs and where each program is headquartered on an interactive map.

Using the “Certification Quickfinder”, the user is capable of separating out certification programs by operation level. While multiple operation levels exist in the portal itself, it was simplified down to three main categories for this comparison: international, national, and local. The “international” and “regional” operation levels were combined into one “international” level since both categories represented programs that operate in multiple countries. Once programs were divided into these three levels of operation, there were 52 international level programs, 79 national level programs, and 47 local level programs (totaling 178 programs globally). While this portal provided a comprehensive list of certification programs, it was not guaranteed that this portal had information on each of these programs.

After lists of programs by operation level were compiled, the next step was to gather available data on each program. For this comparison, the information gathered was:

- the presence/absence of environmental, economic, social, and cultural criteria in the assessment process
- program operation (private-, NGO-, or government-operated)
- existence and amount of application/certification fee
- existence and number of certification levels (e.g., bronze, silver, gold, etc.)

Regarding the presence/absence of criteria in the assessment process, while an in-depth comparison could be done that assesses and analyzes all the differences in certification programs in terms of the assessment process, the purpose of this study is to do a general comparison of certification programs via content analysis. In order to not get entangled in the specific differences between programs, it was decided to simplify the

analysis and accomplish a broad comparison that provides a general outlook on certification programs today. With this decision, data compiled for criteria utilized was recorded as yes/no data for each criteria type. It was considered a “yes” for that criterion type if the certification program contained at least one standard in one of the following topics:

- Environmental
 - Energy Consumption
 - Reusable/Consumable Good Consumption
 - Water Consumption
 - Greenhouse Gas Emissions
 - Waste and Wastewater Management
 - Reduce, Reuse, and Recycle Strategy
 - Biodiversity (Fauna) Conservation
 - Landscape and Flora Protection
 - Interactions with Wildlife
- Economic
 - Local and Fair-trade Services
 - Local Entrepreneurs and Businesses
 - Equitable Hiring
 - Employee and Wage Protection
 - Child Labor Protection
- Social
 - Education Initiatives

- Health Initiatives
- Local Employment
- Exploitation Protection (i.e. Sexual Exploitation)
- Provision of Basic Services
- Respecting Local Communities
- Cultural
 - Protection of Local Sites of Historical or Cultural Importance
 - Implementation of a Code of Behavior
 - Incorporation of Local Culture into Tourist Experience

While most programs have publicly available information, it is not guaranteed that each program has published their criteria and standards. After attempting to search for data on each of the 178 certification programs, usable and complete information was found on 116 programs. The breakdown by operational level is as follows: 37 international programs, 54 national programs, and 25 local programs. These 116 certification programs are the programs included in this comparison.

Data Analysis and Statistical Tests

Criteria vs. Scale of Operation

The first analysis completed was an analysis that compared criteria across levels of operation. The dependent variable in this case was the yes/no data for each type of criterion (environmental, economic, social, and cultural). This is considered binary categorical data. The independent variable is the scale of operation. A separate analysis was completed for each of the four types of criteria.

Since this analysis has one independent categorical variable with multiple independent levels (in this case three levels: international, national, and local) and the dependent variable is also categorical, a chi-square test was completed to test for the statistical significance of any observed differences between levels. Beyond a chi-square test, post hoc tests utilizing a false discovery rate correction were completed in order to test for significant differences between the various levels of the independent variable. A p-value less than 0.05 was considered significant.

Operating Body vs. Scale of Operation

Similar to the previous section and analysis, certification programs were assessed based on whether the program was publicly or privately operated, and how that varied based on the scale of operation. These data were recorded categorically as follows: 0 = public or governmental, 1 = non-governmental or non-profit, 2 = private. These data are considered the dependent variable. The scale of operation is considered the independent variable with three levels (international, national, and local) and a chi-square test was completed to test for statistical significance since both variables are categorical. A post hoc test using a false discovery rate correction was also completed in order to test which level of comparisons were significant. A p-value less than 0.05 was considered significant.

Fees vs. Scale of Operation

For this analysis, the goal was to determine if the scale of operation impacts the monetary cost of participating in the program. The independent variable in this case is the scale of operation (with three levels) and the dependent variable is the required fees to participate. Because programs differ in terms of fees charged (i.e., some have application

fees while others do not, and some have certification fees while others do not) a total cost of participating was determined by adding together all monetary fees associated with the application and certification process. In instances where the participation cost differed based on either operator size or level of certification achieved, the highest fee was utilized for these analyses.

Because the fee amount was recorded in actual dollar amount and some programs have no application or certification fee (representing a true zero value), a one-way ANOVA is typically used. However, a Shapiro-Wilk normality test resulted in a significant p-value (less than 0.05), indicating that data are not normally distributed and that a nonparametric test is necessary. In this case, a Kruskal-Wallis statistical test was utilized followed by a pairwise Wilcoxon-Mann Whitney U Comparison test to test for statistical significance between groups. A p-value less than 0.05 was considered significant.

Number of Levels vs. Scale of Operation

In order to test if the geographic scale of operation impacts the number of levels of certification offered by the program, a Kruskal-Wallis test (nonparametric one-way ANOVA) was performed followed by a pairwise Wilcoxon-Mann Whitney U Comparison Test (nonparametric t-test) to test for statistical significance between groups. Prior to conducting these tests, a Shapiro-Wilk test was performed to test for data normality and determine if parametric or nonparametric tests were necessary. For all tests completed, a p-value less than 0.05 was considered significant.

Criteria vs. Fees

While assessing certification programs across levels of operation was the ultimate goal of this study, it was determined that an additional analysis that may provide interesting findings is a comparison of criteria utilized in programs based on the overall participation fee charged to join the program. For this analysis, the total combined fee amount is considered the independent predictor variable and the inclusion of a certain criterion type is the dependent outcome variable. A separate analysis was completed for each criterion type for a total of four analyses (environmental, economic, social, and cultural). Since this analysis utilizes data in the form of a continuous predictor variable and categorical outcome variable with two outcomes, a binomial logistic regression was used to test for statistical significance. For each regression, a p-value less than 0.05 was considered significant.

Criteria vs. Operating Body

An additional test completed was a comparison of criteria utilized based on the operation of the program itself and whether the program is operated by a governmental body, an NGO, or a private company. In this analysis, the independent variable was the supervising body of the program and the dependent variable was the criterion type. Since the independent variable in this analysis has three independent categorical levels (public, NGO, or private) and the dependent variable is binary categorical data, a chi-square test is utilized similar to the tests above. A separate chi-square test was completed for each criterion. As with other chi-square tests completed, a post hoc comparison test using false discovery rate correction was used to determine differences between groups. For all tests, a p-value less than 0.05 was considered a significant result.

RESULTS

How does the geographic scope of the program impact the overall program design?

Data Summary

Table 2.1.

Summary of data separated by geographic scope of program. Data summary presented to provide additional information and act as a reference for statistical tests. Summary displays programs grouped together by geographic scope and included proportion of programs that included each criterion type, average number of levels, average participation cost, and a breakdown of programs by operating body. International (n = 37), National (n = 54), Local (n = 25).

	International	National	Local
Includes Environmental (%)	100	100	100
Includes Economic (%)	70.3	77.8	28
Includes Social (%)	73	70.4	40
Includes Cultural (%)	48.6	42.6	24
Average # of Levels	1.16	1.97	1.44
Includes Fee (%)	100	90.74	41.67
Average Fee (\$)	2,549.89	1,683.25	146.83
Public (%)	5.4	22.2	68
NGO (%)	45.9	55.6	32
Private (%)	48.6	22.2	0

Prior to discussing statistical results, Table 1 provides a summary of data collected. Data are separated by geographic scope of program. Environmental criteria are not explicitly discussed statistically since all certification programs included in these comparisons involve the use of some form of environmental criteria in their assessment procedures.

Assessment Criteria

Table 2.2.

International and national level programs are more likely to include economic and social criteria when compared to local level programs but are not different from each other. Data analyzed by chi-square test followed by post hoc comparison with a false discovery rate correction. Data presented are p-values from post hoc comparisons between groups. Chi-square tests resulted in a significant difference between groups for economic criteria ($p < 0.001$) and social criteria ($p = 0.042$) but not for cultural criteria ($p = 0.168$).

	International v. National	International v. Local	National v. Local
Economic	0.785	0.008	0.001
Social	0.938	0.064	0.052
Cultural	0.913	0.285	0.326

Examining economic criteria by geographic level of operation (Table 2), the chi-square and post hoc tests determined that program geographic scope does impact the inclusion of economic criteria ($p < 0.001$). International and national level programs were not statistically different from each other ($p = 0.7848$), with 70.3% of international programs and 77.8% of national level programs including economic criteria (Table 1). However, international and national level programs were both statistically different from local level programs ($p = 0.008$, $p = 0.001$), with only 28% of local level programs including economic criteria in assessment procedures (Table 1). Results indicate that international and national level programs are much more likely to include economic criteria in their assessments of applicants when compared to local programs.

Social criteria proved to follow a similar trend to economic criteria (Table 2). However, while the overall chi-square test was significant ($p = 0.04$), the post hoc tests were not significant ($p > 0.05$). In terms of percentages, 73% of international programs, 70.4% of national programs, and 40% of local programs included social criteria in assessment procedures (Table 1). Using these percentages, when comparing international programs to national programs, the resulting p-value was 0.938, international to local programs resulted in a p-value of 0.064, and the national to local program comparison resulted in a p-value of 0.052. International and national level programs are more likely to include social criteria compared to local programs.

Lastly, analyzing cultural criteria by level of operation (Table 2) was not statistically significant ($p = 0.168$). Overall, programs were least likely to include cultural criteria in their assessment procedures. The majority of programs, regardless of level of operation, did not include cultural criteria in their assessment with only 48.6% of international programs, 42.6% of national programs, and 24% of local programs including cultural criteria in their assessment process (Table 1). Post hoc comparison tests resulted in international programs not being statistically different from national programs ($p = 0.913$) or local programs ($p = 0.285$), and national programs not being statistically different from local programs ($p = 0.326$).

Program Operation

Chi-square test indicates that a program's geographic level of operation is correlated with the operating body of a program ($p < 0.001$). Post hoc tests were also all significant (Table 3), with international programs being statistically different from national programs ($p = 0.036$), international programs being statistically different from

local programs ($p < 0.001$), and national programs being statistically different from local programs ($p = 0.001$).

Table 2.3.

Geographic scale of a program significantly impacts the resulting operating body of a program. Data were analyzed by chi-square test followed by a post hoc comparison with a false discovery rate correction. Results indicated that there was a significant difference between groups ($p < 0.001$), with pairwise comparisons resulting in significant differences between international and national programs ($p = 0.036$), international and local programs ($p < 0.001$), and national and local programs ($p = 0.001$). Superscripts represent these significant differences between groups, with all three being significantly different from each other.

	International^a	National^b	Local^c
Public	2	12	17
NGO or Non-profit	17	30	8
Private	18	12	0

Number of Levels

Assessing programs by the number of certification levels the program contains and analyzing by geographic scale of operation (Fig. 1), there is a statistically significant difference between geographic scales ($p = 0.043$). Pairwise Wilcoxon-Mann Whitney U Comparison Tests determined that while local programs are not statistically different from international ($p = 0.247$) or national level programs ($p = 0.312$), international programs are significantly different from national programs (0.045), with national programs tending to have more certification levels offered compared to their international counterparts. Average number of levels per geographic level can be found in Table 1.

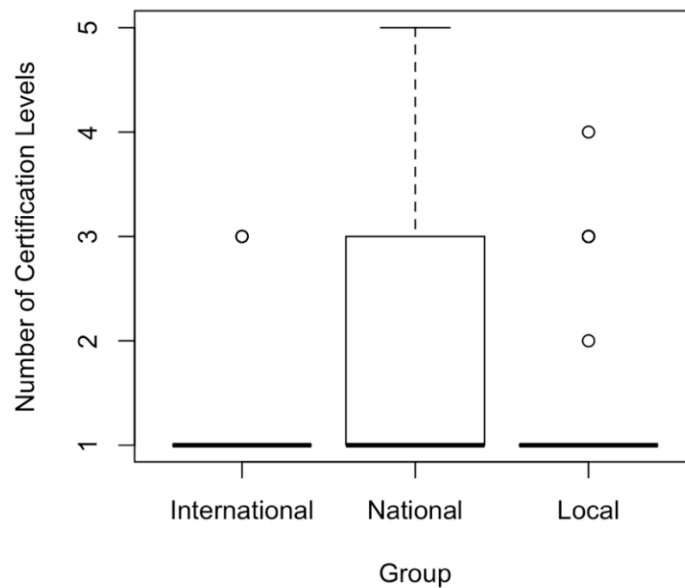


Figure 2.1. National-level programs tend to have a higher number of levels of certification offered when compared to international- and local-level programs. A Kruskal-Wallis nonparametric test determined a significant difference when comparing the number of certification level offered by programs when separated by geographic scale of operation ($p = 0.043$). Pairwise comparisons demonstrated that while local programs were not statistically different from national programs ($p = 0.312$) or international programs ($p = 0.247$), national programs were statistically different from international programs (0.045).

Fees

For this analysis, all application and certification fees associated with a program were added together in order to create one composite fee to participate in a program. Once all fees were compiled and analyzed based on geographic scale, there was a significant difference between groups ($p < 0.001$). A resulting pairwise comparison with false discovery rate corrections found there to be significant differences between international and national programs ($p = 0.035$), international and local programs ($p < 0.001$), and national and local programs ($p = 0.005$). Figure 2 displays the data by geographic scale and it can be inferred that the larger the scope of the certification program, the more expensive it is to participate.

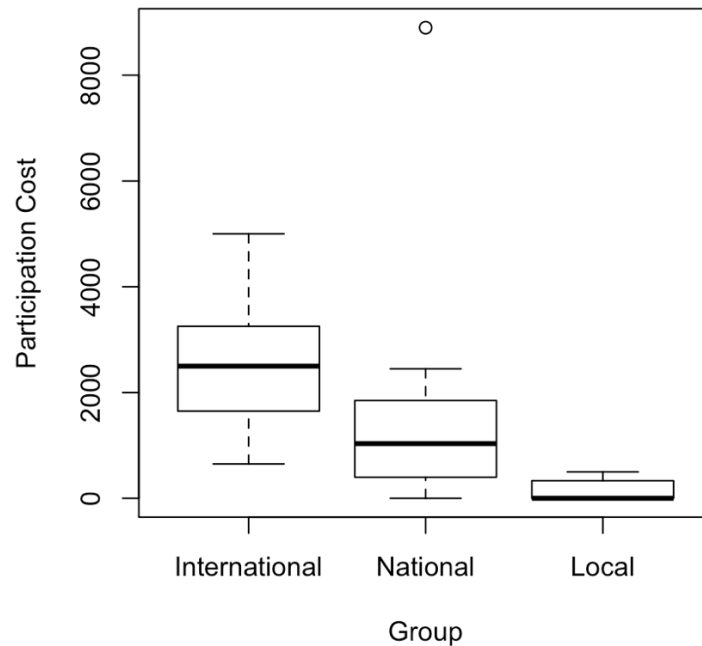


Figure 2.2. The geographic scale of a program is directly correlated with the cost to participate in that program. Application and certification fees were compiled for each program and assessed by geographic scale as one total participation cost. A Kruskal-Wallis test proved that there are significant differences between groups ($p < 0.001$). The Wilcoxon-Mann Whitney U pairwise comparison tests determined that international and national programs were significantly different from each other ($p = 0.035$), as well as international and local ($p < 0.001$), and national and local ($p = 0.005$).

How are assessment criteria impacted by program fees or the program’s operating body?

Data Summary

Table 2.4.

Summary of inclusion of criteria data separated by program’s participation cost.

Programs were separated by participation cost into four categories, each containing roughly the same number of programs. Table is included as reference for statistical tests and displays percentage of programs that contained each criteria type in each of the four fee groupings.

	\$0	\$1-500	\$501-1500	>\$1500
Includes Economic (%)	12.5	85.7	71.4	90
Includes Social (%)	50	62.5	71.4	80
Includes Cultural (%)	25	37.5	42.9	70

Table 2.5.

Summary of inclusion of criteria data separating by program’s operating body.

Programs were separated by operating body. Table is included as reference for statistical tests and displays percentage of programs that contained each criterion type in each of the three operating bodies that operate certification programs.

	Public	NGO	Private
Includes Economic (%)	45.83	72.5	65
Includes Social (%)	50	70	65
Includes Cultural (%)	29.2	45	40

Prior to discussing statistical results, Tables 4 and 5 provide a summary of data collected. Data are separated by the monetary participation cost of the program (Table 4) and by the observed operating bodies of these certification programs (Table 5). These

tables are included to act as a reference for the following statistical tests and present a summary of the raw data. Environmental criteria are not explicitly discussed statistically since all certification programs included in these comparisons involve the use of some form of environmental criteria in their assessment procedures.

Fees

A separate logistic regression was completed for economic, social, and cultural criteria for a total of three logistic regressions (Table 6).

Table 2.6.

Certification program participation cost significantly predicts the inclusion of economic assessment criteria but is not a good predictor of social and cultural assessment criteria. Separate logistic regressions were completed for each criterion type with the presence/absence of criteria representing the binary outcome variable and the participation cost of the certification program (application/certification fees) being the continuous predictor variable. B = Beta coefficient, df = degrees of freedom, S.E. = Standard Error.

	B	df	S.E.	Wald χ^2	P-value
Economic	0.001	1	0.001	4.139	0.042
Social	0.001	1	0.000	2.158	0.142
Cultural	0.000	1	0.001	0.887	0.346

The results from these regressions indicated that the participation costs of these programs were an indicator of whether or not the program utilized economic criteria (p = 0.042) but were not indicators of the usage of social (p = 0.142) or cultural criteria (p = 0.346).

Program Operation

Table 2.7.

A certification program's operating body does not significantly impact the assessment criteria utilized. Data analyzed by chi-square test followed by post hoc comparison with a false discovery rate correction. Data presented are p-values from post hoc comparisons between groups. Chi-square tests resulted in no significant differences between groups for economic criteria ($p = 0.1$), social criteria ($p = 0.27$), or cultural criteria ($p = 0.453$).

	Public v. NGO	Public v. Private	NGO v. Private
Economic	0.186	0.501	0.765
Social	0.547	0.731	0.922
Cultural	0.321	0.663	0.927

A separate chi-square test was completed for each of the three criteria assessed (Table 7). Tests indicated that the operating body of a certification program does not impact the criteria used by the program with chi-square tests resulting in p-values of 0.1 for economic criteria, 0.27 for social criteria, and 0.453 for cultural criteria.

DISCUSSION

Prior to explaining my major findings, I must state that all analyses presented solely used publicly available information. While most of the information available was comprehensive, it may be true that there is information on some, or all, of these programs that I did not have access to. This means that there may be components of these programs that I am not aware of, and if I had this knowledge, maybe my findings would be different. For instance, I did not take into consideration if a program offered any type of advancement or education program for applicants that would either help them reach certification status or increase their certification level. These types of initiatives would

certainly be considered as a positive component of the program, but since many publicly available records did not address this, I was not able to assess its prominence within the larger certification industry.

There are clear trends in the findings that suggest that the geographic scale of the program does impact a program's overall structure and assessment criteria utilized. Examining the results of the comparison of programs and the criteria used when separated by geographic scope, international- and national- level programs were far more likely to include social and economic criteria in their assessment procedures. Furthermore, even though there were no statistical differences between programs in regard to cultural criteria, there is a slight trend skewing toward this conclusion.

This finding is interesting considering that previous literature often states that the smaller scale programs are the most comprehensive and should be the programs of choice for both operators and tourists alike (Sasidharan et al. 2002). Comparing the findings of these current analyses to the opinions observed in the literature, while there are several reasons why I believe these differences in criteria utilized exist. Up to this point, the literature and the arguments presented are based on the belief that smaller programs are more capable of tailoring their criteria to the local industry (Bowman, 2011; Brinkerhoff, 1996). While this tailoring may be true, the opinions presented in prior studies do not take into consideration the breadth of criteria necessary to establish a comprehensive ecotourism assessment process and, furthermore, are not based on any previous comparison since one as comprehensive as the one presented here has not been done before.

Examining reasons why local level programs were statistically less likely to include social, cultural, and economic criteria in their assessment processes, most simplify to:

- 1) most local level programs utilize a process-based assessment approach rather than a performance-based one (Warnken et al. 2005; Honey, 2003),
- 2) most local level programs tend to have limited resources available to them (Honey, 2002), and
- 3) most local level programs included in this study were located in the more developed Northern Hemisphere.

Each of these is explained in more detail in the subsequent paragraphs.

Beginning with the process-based explanation, historically, processes-based certification programs, especially in the ecotourism industry, have been and are entirely environmentally-based (Diamantis and Westlake, 2001; Darnall and Sides, 2008). Many current process-based programs, including those at the local-level, focus heavily on waste management, recycling, pollutant emissions, and water and energy consumption (Viegas, 1998; Esparon et al. 2014). These are all assessed through an environmental lens. With the process-based mindset that is focused primarily on waste and energy reduction technology and conservation processes utilized with the intention to help applicants reduce their business operating expenses, it is often not viewed as necessary for process-based certification programs to incorporate social, economic, and cultural assessment criteria (Synergy, 2000; Caro and Garcia, 2009).

Considering the size of these local level programs, many are often managed by a small team with limited resources so an in-depth assessment procedure is not feasible.

Most tend to focus on environmental criteria due to these constraints in resources. Furthermore, with these smaller programs, the verification and auditing process, or the procedure used to assess applicants and test if the applicant is certifiable or not, is often self-verification. This further supports the use of solely environmental criteria since these criteria are often easier for tourism operators to calculate and provide documentation/evidence for.

Lastly, while many international and national level programs brand themselves as ecotourism certification programs that utilize a holistic assessment process, many local level programs often brand themselves solely as environmental certification programs (Font and Buckley, 2001; Rattan, 2015). This distinction lends support to the findings in this comparison. Building on this environmental focus, most of the local level programs included in this comparison were coincidentally located in either the United States or in the European Union (with a majority being in the United States) due to availability of accessible data. The national and international level programs included represented a much more global sample. This distinction is important because historically, the literature suggests that certification programs in the Northern Hemisphere (representing the developed world) began as and still are more focused on environmental standards. Those in the developing world tend to utilize social, economic, and cultural criteria in addition to environmental indicators (Collins, 1996; Lebe and Vrecko, 2015). The existence of a North-South divide is a constant concern that appears in the ecotourism literature (Campbell, 1999; Wearing, 2001; Haaland and Aas, 2010). Since most local level programs included in this analysis were found in the Northern Hemisphere, the findings from this comparison support and provide evidence that this concern is a reality.

Analyzing the findings that national level programs are most likely to include multiple levels of certification, there are three potential reasons. First, international level programs are large in scope and in an attempt to simplify the assessment process only offer one level of certification with clear and distinct guidelines. Second, similar to above, local level programs tend to have limited resources and are more often process-based. Process-based programs are not designed to offer multiple levels of certification and furthermore, similar to international programs, local programs want to simplify the assessment process as much as possible to reduce operation costs. In doing so, local level programs often only offer one level of certification. Third, for a combination of the reasons above, many international and local programs often rely on a self-audit process of applicants. With a self-audit process in place to determine certification status, there is little need for multiple certification levels to exist within the program since most applicants would simply claim the highest level regardless of whether they actually meet the associated standards for that level.

Moving to an analysis of program operation by geographic scale, there is clear distinction in that international, national, and local level programs are all operated and overseen by different operating bodies. Results indicate that not only is the operating body of a program strongly correlated with the geographic scale of the program, but also that each geographic level of operation is strongly associated with a specific operating body. International level programs tend to be split between NGO and private supervision, national level programs are overwhelmingly skewed towards NGO management, and local level programs are often operated by governmental agencies or departments. Since certification programs are expensive and time consuming to operate due to at least some

percentage of applicants needing to be physically assessed and verified, this finding is not unexpected considering that most international level certification programs are for-profit enterprises. Furthermore, while government agencies and NGOs may be partners and help support large international level programs, it is rare that these groups choose to fund or operate certification programs at a large-scale on their own. They would rather choose to fund or support a wider range of initiatives. Because of this, the finding that as the scope of programs widens it is more likely to be privately operated is not surprising.

This finding of differences in the operating body by geographic scale is strongly correlated with the finding that international level programs are often the most expensive in terms of participation fees, followed by national programs, and then local programs. Not only are international programs more expensive to operate simply due to scale, which supports higher fees on its own, my findings suggest that international level programs are more likely to be privately owned and operated, suggesting a for-profit operating structure and further supporting the observed higher fees. For national level programs, which are often NGO operated, while these are non-profit organizations, I propose that there often still needs to be revenue in order to support and operate these programs at this geographic scale. While not explained in the literature, the fact that national programs still operate across wider areas supports the existence of participation costs for national level programs but also helps justify why fees for national programs are not as high as for international programs. Lastly, the findings that local programs are often government run and the least expensive to participate in reinforce each other. With local programs being government run, they are subsidized and paid for through government funds and do not

rely on participation fees from applicants. This supports the finding that local level programs are the least expensive.

Up this point, I have discussed how the geographic scope of a program impacts the operating body of the program and assessment criteria used. A second analysis suggested as this comparison and the analyses unfolded was how or if the criteria utilized by a program are correlated with participation cost or operating body. Assessing if participation fees are correlated with criteria used, results demonstrated that the presence of fees are significantly related to the presence of economic criteria, but do not predict use of social or cultural criteria. For the program's operating body, no correlation was found between program operation and criteria utilized. This suggests that overall, while the presence or absence of program fees may slightly impact the criteria utilized by a program, the geographic scope of a certification program has the greatest impact on program structure and the criteria it utilizes in its assessment procedures.

Conclusions and Practical Implications

With these findings, this study gives much needed answers to further the tourism and certification literature, aids in identifying programs that can help create a certification standard for the entire industry, and provides a stepping stone that can be utilized and built upon in future studies by taking this general comparison of programs and further teasing apart the observed differences to better determine underlying causes.

Previous studies all argue that national and local level programs are the certification programs that we should be supporting due to their ability to better reflect the specific ecotourism industry found in an area (Epler Wood and Halpenny, 2001). While this study's comparison does not necessarily argue against this pre-existing belief,

it does provide evidence that these smaller scale programs are not as comprehensive as their international counterparts when it comes to assessment criteria utilized. The data suggest that most smaller scale programs focus primarily on environmental indicators. In order for certification to best promote ecotourism and identify operators that represent the overall tenets of the industry, it is imperative that programs, regardless of operation, level utilize a combination of environmental, economic, and sociocultural criteria. The findings presented here suggest that international and national level programs best incorporate an assessment process that utilizes criteria across indicators. Certification programs at these levels should be the ones utilized when creating standards and best practices for the certification industry.

If creating a baseline standard for assessment criteria is not desired in the certification industry, than these analyses are also informative from the perspective of better understanding different programs and what specific criteria each tends to focus on in their application process. It may be the case that some programs are adamant in solely focusing on environmental impacts while others desire to use a more holistic assessment process. If so, the certification industry must be reformed to allow both tourists and tourism businesses to better differentiate between programs and eliminate some of the existing confusion surrounding certification.

Beyond creating guidelines for the certification industry as a whole, since most local level programs included in this comparison came from the Northern Hemisphere, a future study can expand on these local programs and incorporate others in order to complete an in-depth analysis of local level programs globally. This proposed study could help determine what differences, if any, cause some local programs to include

criteria in all four categories compared to those that solely focus on an environmental assessment. The findings of this future study can then suggest tactics for local level programs that allow them to increase their capacity of incorporating assessment criteria across indicators, which would in turn aid in creating a more rigorous assessment process and improving these local level programs.

While this current comparison offers a birds-eye view of programs and the differences that exist between them, this study does not assess tourist perceptions of certification or take into consideration the actual impact of specific certification programs on tourist decisions (Chafe, 2007; Foster, 2003). A future study could take the results from this analysis and utilize them in tandem with studies that have assessed tourist perceptions of certification (Esparon et al. 2014; Bien, 2005; Ayuso, 2006) and build upon the list of candidate programs that can be utilized to create a certification standard for the entire industry. This proposed study can also be beneficial in identifying a particular geographic scale of operation that allows certification programs to incorporate a holistic assessment process while simultaneously maximizing the program's influence on tourist decisions (Esparon et al. 2013).

In conclusion, these findings suggest that while international level programs are most likely to utilize assessment criteria across indicators, they are also the most expensive for participants. Furthermore, results indicate that the geographic scope of the program is highly correlated with the operating body that manages the program. These results suggest that there are benefits and consequences to any certification program. Applicants must decide which program best suits their specific needs and desires prior to applying. This decision gets increasingly difficult as the number of certification programs

globally grows. The data presented here demonstrates clear trends in the ecotourism industry. Future work can build upon this comparison to better understand these correlations and test for underlying causes.

Connecting this chapter to subsequent chapters, these analyses provide a general overview of certification programs in their current form and trends that exist across the industry. The impacts of these trends, are further explored in the following chapters. Particularly, I explore the impact of certification on tourist visitation and the impacts that certification may cause on certified and uncertified tourism businesses and local communities. Since the analyses presented in this chapter suggest a wide range of criteria used by programs, and the existence of a divide between programs based on location and geographic scope, my findings justify further research by suggesting that different programs can lead to different outcomes. I explore these differences in the following chapters.

CHAPTER 3

NATIONAL-LEVEL DRIVERS OF TOURISM VISITATION TO ECOTOURISM

DESTINATIONS

OVERVIEW

Nature-based tourism has gained popularity globally over the past two decades. An increasing number of tourists are visiting national parks, protected areas, and other sites that expose visitors to a natural, or wild, setting (Arnegger et al. 2010, Lee et al. 2013). Previous studies have suggested that nature-based tourism is growing by an approximate 10-30% annually, roughly two to five times faster than the growth rate for the tourism industry in general (McKercher and Robbins, 1998; Jones and Ohsawa, 2016; Nyaupane, 2004). For a third of tourists, the natural environment now constitutes the main reason for travel to a destination (Beh and Bruyere, 2007; Ballantyne et al. 2011). Their motivations behind these decisions are often environmentally related (i.e., visiting an uncrowded or pristine natural destination and learning about and appreciating nature) (Zeppel, 2008). Beyond the number of tourists increasing worldwide, the number of natural destinations that have become popular has also increased, suggesting that individuals are not only traveling more, but are visiting different parts of the world than were historically visited (Kim et al. 2015).

While the growth of nature-based tourism also represents the expansion of job opportunities globally and the growth of related industries such as hotels and lodging, transportation, and travel agencies, this growth comes with associated obstacles, both for tourism providers and tourists alike (Garg, 2015; Goeldner et al. 2006; Henderson, 2007). Due to the industry's inherent characteristics that involve individuals traveling to specific

destinations across the world, these obstacles are often highly correlated with a specific geographic region and include but are not limited to natural disasters, epidemics, and safety and security concerns (Bentley et al. 2001). Each destination can have its own set of obstacles based on the combination of its location and its sociocultural, economic, and political characteristics. These obstacles are often labeled as travel risks and have the potential to have serious impacts on tourist behavior and travel decisions, subsequently impacting the nature-based tourism industry as a whole (Murthy, 2008). Beyond site specific obstacles, the tourism industry is also prone to influence from global phenomenon. The most recent of these being the COVID-19 pandemic occurring in 2020, which significantly reduced tourism numbers around the world.

Previous research suggests that a traveler's behavior and decision-making in regard to destination choice are intimately connected to the associated travel risks of a destination (Sonmez and Graefe, 1998a; Fuchs and Reichel, 2011). Destinations differ in multiple respects, ranging from differences in geographic location to differences in political stability and health hazards. The more perceived travel risks associated with a destination, the less likely a tourist will visit (Chiu, 2008). Given these differences in destinations, the analysis of destination risk and the components of travel risk perception that most impact travelers' destination decisions is of substantial research interest (Dolnicar, 2005; Amara, 2012). This study aims to help advance this area of research by focusing particularly on destinations characterized by nature tourism and ecotourism. This analysis will further our knowledge of tourist decision-making and the role of perceived risk in destination choice, an ever expanding and increasingly complex topic for tourism researchers (Sharifpour et al. 2014) by comparing nature and ecotourism

destinations to the mass tourism destinations, the destinations often studied in the large body of literature that currently exists. This analysis will also be useful to tourism practitioners by allowing them to identify and alleviate, or at least better address, specific travel risks in hopes of creating a more enticing destination for tourists and better capture a segment of the ever-growing and increasingly competitive tourism industry (Ng et al. 2007).

The aim of this research study is to explore and analyze different national indicators of travel risk, and other (more positive) indicators often associated with nature-tourism (e.g., number of UNESCO World Heritage Sites, amount of biodiversity), to determine the impacts that these indicators may have on a tourist's destination choice, with the destination in this study being a specific country. One objective is to identify which travel risks most influence tourist decision-making based on actual international visitation data, data representing individuals visiting an international destination and staying for more than 24 hours, but less than one consecutive year (Garg, 2013). Since this study focuses on nature-based tourism destinations, an additional, yet equally important objective, is to determine which national environmental indicators, if any, are most correlated with observed tourism visitation in hopes of discovering what aspects of the environment, if any, represent the biggest draw for tourists globally.

The research questions for this study are as follows:

- What national-level indicators influence international tourism visitation and tourist's destination choice when specifically assessing nature tourism and ecotourism destinations?
- What is the relationship between travel risk perceptions and observed visitation?

- What environmental indicators, if any, have the greatest influence on drawing tourists to nature-based tourism destinations?

Based on these research questions and the methods used, this analysis does not utilize traditional hypothesis testing. Rather, this analysis aims to estimate a tourist visitation model. This is accomplished by incorporating travel risk indicators that previous studies found to be significant in a tourist's decision-making process, environmental indicators that may potentially influence a tourist's destination choice, and the presence of ecotourism certification programs in a destination. The goal of this analysis is to create a regression model in which these indicators appear as the independent variables and are tested in relation to international tourism arrivals. This is done in order to determine the predictive capacity of each indicator with the hope that regressions will allow for the determination of which factors are most important in a tourist's destination choice when those destinations are specifically nature tourism or ecotourism destinations.

TRAVEL RISKS

Travel risk and destination choice have been highly studied previously, especially since the occurrence of the September 11th terror attacks in 2001 (Mansfeld, 2006) when safety and security became main concerns for tourists (Hall et al. 2003). This will again become a large area of research in light of COVID-19 and the detrimental impacts the pandemic has had on the global tourism industry in 2020.

Within this large field of research, existing studies fall primarily into two categories. One strategy has been to approach the topic from an aggregate level and address observed destination choices by utilizing available data from multiple sources (Drakos and Kutan, 2003). The focus of this research is to better understand tourist

decisions and flows and the outcomes associated with these destination choices, but this research is unable to incorporate individual choice and nuances into the analyses (Karl, 2018). The second strategy investigates travel risk and destination choice by utilizing an individual perspective (Kozak et al. 2007). This is often completed by conducting surveys of tourists in a particular destination with the hope of identifying specific considerations that tourists had when selecting that specific location as a place of travel (Fletcher and Morakabati, 2008). These considerations can either be specific to the destination itself or can be related more to the role that previous experiences and prior knowledge play in tourist decision-making (Fuchs et al. 2013). Regardless of strategy, both can agree that travel risk plays an important role in tourist decision-making and destination choice.

While there are positive and negative aspects to both branches of research on this topic, those that focus on individual perceptions are often restricted by either focusing on a singular destination or on a specific segment of the tourist population (Jonas et al. 2011; Fuchs, 2013). This is problematic because many factors are incorporated into one's destination choice. Therefore, studies focusing on a single location cannot always be applicable to all destinations globally due to innate differences in what tourists will consider in their decision-making process based on the destination itself (Karl, 2018). Furthermore, previous research demonstrates that travel risk and destination choice are influenced by demographic and cultural variables, and these differences are not considered when examining a specific tourist group (Lepp and Gibson, 2008; Park and Reisinger, 2010).

While the study of either a specific destination or specific tourism group allows insight into particular aspects of the overall decision-making process, these studies are

not able to fully capture the complex role that travel risk plays in destination choice.

Based on these shortfalls and the desired outcomes of this research, this study chooses to follow the first branch of research and assess travel risk at an aggregate level by utilizing available secondary data on tourism visitation and indicators of travel risk in order to investigate the impact that specific travel risk indicators have on observed visitation to a specific country.

Decision-Making and Destination Choice

When it comes to destination choice, a tourist's decision-making process is heavily influenced by the perceptions of travel risks associated with a particular destination (Sonmez and Graefe, 1998b; Fuchs and Reichel, 2011). Examining previous research that addresses travel risk from an aggregate level, studies have identified four major risk categories that are often considered in a tourist's decision-making process (Hall et al. 2003): terrorism, war, and political instability (Richter, 2003); crime (Dimanche and Lepetic, 1999); language barrier (Basala and Klenosky, 2001); and cultural differences (Mitchell and Vassos, 1997). Other major risks often associated with travel risk include but are not limited to health risk (Jonas et al. 2011) and natural disasters (Huan et al. 2006). Taking all of these into consideration, the higher the overall risk, the less likely a tourist will decide to visit that particular destination.

While risk perception is a key component in the decision-making process and the traditional travel risks are included in this current study, tourists also incorporate other constraints such as time, budget, and physical distance to destination into the decision process (Sharifpour et al. 2014; Nicolau and Mas, 2006). These additional constraints represent the relative cost of visiting the destination as well as the overall ease of getting

to the destination. These additional variables have been used previously in tourism demand research (Lee et al. 2006; Morley, 1998), but have seldom been incorporated into existing travel risk and tourist decision-making models although each are important considerations of tourists when it comes to destination choice (Garg, 2015; van Raaij and Francken, 1984). This study includes these additional variables to build upon previous studies. Furthermore, since this study focuses specifically on nature and ecotourism destinations globally, the inclusion of these additional variables allows for a better comparison between traditional destinations and those included here.

Past studies on the relationship between travel risk and destination choice have found that while multiple types of risk are considered, travel risk factors that can affect tourists' physical well-being are the most influential factors considered in destination choice (Gray and Wilson, 2009). Tourists choose a destination based on the perceived risks of visiting that destination and will likely choose an alternative location if these risks are too high (Sonmez et al. 1999). Many previous studies conclude that the existence of a potential risk creates a bad image for the destination, negatively influencing a tourist's decision-making process (Mawby, 2000). This is supported by available travel statistics and the observed trend that tourism demand decreases as the perceived risk of a destination increases (Floyd and Pennington-Gray, 2004).

Travelers assess risk, as well as these other constraints, by utilizing a variety of different indicators. Destination choice is ultimately the result of the processing of information from multiple sources (Gartner, 1994). Research suggests that as the perceived risk of a destination increases, the amount of information used in decision-making also increases (Maser and Weiermair, 1998). Beyond gathering information from

online resources and travel guides, a key component in tourist decision-making is the experiences of others at the destination in question (Kotler et al. 2013). The sharing of these experiences between consumers has been found to be the most trustworthy source of destination information, over destination-specific advertising and promotion materials, and helps to decrease uncertainty in a tourist's decision (Park et al. 2007). These shared experiences have been found to be an integral component in decision-making for most tourists (Dowling and Staelin, 1994).

Although many tourists take several factors into consideration when choosing a destination, the factors considered in the decision-making process can vary by tourist and their specific motivations for traveling, ultimately impacting their final destination choice (Wong and Yeh, 2009). Tourists can have differing perceptions of travel risks associated with a destination and based on these perceptions can be described as either risk-averse or risk-taking (Garg, 2015). While the term “risk-taking” is what is commonly used in the literature, “risk-taking” is synonymous with “adventure-seeking” in the context of this study. Tourists described as risk-taking do not put much weight on travel risk perceptions when deciding on a destination and care more about the adventure that the destination represents rather than its associated risks (Amara, 2012). Others are risk-averse and utilize a decision-making process similar to the one described in the previous paragraph. This distinction is critical for this study due to the use of aggregate level data and the possibility that results may not follow traditional travel risk predictions. Especially when considering that this study focuses on countries with a high prevalence of nature-based tourism, a tourism type that is often characterized by adventure seekers and tourists that are more willing to take risks as further explained in the following section.

Nature-based Tourism

In contrast to the average traveler, nature-based tourists very often seek destinations that are most capable of supplying their specific needs and desires, with these needs and desires often revolving around a particular natural experience (Lubbe, 1998). These needs and desires, often labeled as “motivations”, in the nature-based tourism context, can be grouped together into four major categories: climate, adventure, escape/relaxation, and personal (Beerli and Martin, 2004). Some examples can include: seeing a particular species, or group of species, found only in a specific area (Ballantyne et al. 2011); visiting a natural area to connect with nature, escape an urban setting, or be exposed to an entirely different climate or landscape (Kim et al. 2015); or participate in a specific form of recreation (Gundersen et al. 2015). These additional motivations for nature-based tourism represent further underlying forces that influence a tourist’s ultimate choice of destination (Beh and Bruyere, 2007). Since this study aims to analyze nature-based tourism destinations in particular, it is important that these motivations be incorporated into the analysis.

The inclusion of predictors that represent these ulterior motivations in destination choice for nature-based tourism has not been completed in conjunction with traditional travel risk predictors in previous research. As nature-based tourism continues to grow and become a larger segment of the overall tourism industry, it is vital that we better understand the major influences in a nature-based tourist’s decision-making process. Furthermore, few studies exist that examine which environmental factors most influence a tourist’s decision-making process. This study begins to fill this research gap by

including these indicators in the analyses and comparing them to traditional safety and security travel risks.

Beyond the motivations behind nature-based tourism destination choice, other peripheral information, such as the existence of a nature-based or eco-tourism certification label, may influence the decision-making process (Sparks et al. 2013). While certification labels and their role in destination choice have not been highly studied in the tourism industry, it has been studied in other industries and findings suggest that consumers do pay attention to ecolabels when available (Thorgensen, 2000). In general, certification labels have the potential to amplify the trustworthiness and green aspects of a destination, which can increase the potential tourists trust in the destination, especially in light of nature-based tourism and their desire to connect with and view pristine environments (Rex and Baumann, 2007).

Within the tourism industry itself, there are roughly 178 eco-certification programs with a wide range of criteria and geographic scope (Buckley, 2002a; Chapter 2). The number of programs is growing globally as nature-based tourism continues to develop. Due to the sheer number of programs, these can represent a major channel of information for consumers in their decision-making process. However, research finds that in most cases, consumers lack sufficient knowledge of certification programs to utilize them effectively in their destination choice (Puhakka and Siikamaki, 2012). Since certification is continually becoming a more popular tool within the industry itself to increase credibility (Buckley, 2002b), it is important that we study if this translates into usable consumer knowledge and can impact a tourists' decision-making process, a research gap that has yet to be filled. This study aims to assess the role that certification

may play in destination choice by examining if the existence, or non-existence, of certification programs in the destination is correlated with observed visitation numbers.

METHODS

Data Collection

Nature-based tourism destinations included in the resulting model were decided upon through an extensive review of online travel sources and blogs discussing nature and ecotourism globally. Ten popular travel sites were used in developing a list of candidate nations (Table 3.1). These travel sites were selected based on recommendations from tourism experts as well as overall popularity of each site (determined by the number of “hits” each site received). Nations were included if a destination was recommended on at least five of these sites. Based on this review, a total of 42 countries were included as potential candidates for inclusion into the model. These 42 countries represented the most popular nature and ecotourism destinations globally.

Table 3.1.

Potential destinations for inclusion in regressions were selected based on review of popular travel sites and blogs. Potential destinations were selected after a review of ten online travel sites that listed the “best” or “most popular” nature and ecotourism destinations globally. If a destination appeared and was recommended on at least five of these sites, it was included in the list of candidate nations for further review.

Common Wanderer, The	Lonely Planet
Destination Tips	Ramble and Wander
Eternal Arrival	Travel, The
Green Destinations	Tripping
Green Global Traveler	Uncornered Market

After this list of candidate nations was determined, secondary data for 24 predictor variables of travel risk and other environmental indicators were collected. These predictor variables were determined through a review of the literature or, when available literature was limited as was the case for environmental indicators, through discussions with tourism experts and researchers regarding what potential factors nature tourists may take into consideration in destination choice. As data for each predictor variable was collected, candidate destinations were removed if inadequate information was available. After all secondary data was collected, a total of 31 destinations had a complete data set for all included predictor variables (Table 3.2).

Table 3.2.

A total of 31 countries were included in regression analyses.

Argentina	Honduras	Norway
Australia	Iceland	Panama
Botswana	India	Peru
Brazil	Indonesia	Philippines
Cambodia	Jamaica	South Africa
Chile	Kenya	Sweden
Colombia	Madagascar	Switzerland
Costa Rica	Namibia	Tanzania
Ecuador	Nepal	Zimbabwe
El Salvador	New Zealand	
Finland	Nicaragua	

When possible, longitudinal data was collected over the interval 2005-2017 for each predictor variable. This timeframe was selected for several reasons. First, nature-based tourism became popular as a major tourism type beginning in the early 2000s (Frost and Hall, 2009). This indicates that a starting point prior to 2000 is neither necessary nor desired. 2005 was selected not only to ensure that nature-based tourism had gained traction on a global scale prior to the start of the regressions presented here, but

also to provide a starting point prior to the global recession of 2008, which primarily occurred in the Americas and Europe. This recession greatly impacted international tourism and it took several years for the market to fully recover. It was desired to capture the impacts of this recession on tourism arrivals, at least indirectly. The endpoint of 2017 was chosen due to overall availability of secondary data. Including any year past 2017 resulted in a large increase in missing values within the dataset. When longitudinal data was not available or not possible, such as for the CBD Biodiversity Index or flight prices, only one value was recorded. All predictor variables where longitudinal data was available and incorporated are in Table 3.3; predictor variables where only one value was available or possible are listed in Table 3.4.

Table 3.3.

Longitudinal data was available for 14 of the predictor variables utilized in regression analyses. Longitudinal data for predictor variables was collected for the time period 2005-2017. Longitudinal data was averaged together across years in order to create a cross section, resulting in one value per predictor variable per country.

Predictor Variable	Data Source
Total Population	World Bank
Population Density	World Bank
Total Gross Domestic Product (GDP)	World Bank
GDP per capita purchasing power parity (PPP)	World Bank
Gross National Income (GNI) per capita PPP	World Bank
Political Stability	World Bank
Terrorism Index	Institute for Economics and Peace
Corruption Index	Transparency International
Theft Rate (per 100,00 individuals)	United Nations Office on Drugs and Crime
Homicide Rate (per 100,000 individuals)	United Nations Office on Drugs and Crime
Natural Disaster Risk Index	UNU-EHS
Disability Adjusted Life Years (DALYs)	World Health Organization
Total Number of Endangered Fauna	IUCN Red List
Number of Endangered Mammals	IUCN Red List

Table 3.4.

A total of 10 predictor variables included in regression analyses used one value as opposed to longitudinal data. When longitudinal data was not available or not possible, one data value was used per predictor variable per country.

Predictor Variable	Data Source
Number of International Points of Entry	Central Intelligence Agency
U.S. Flight Cost (New York - JFK)	Priceline
Europe Flight Cost (Berlin – TXL)	Priceline
China Flight Cost (Beijing – PEK)	Priceline
Cost of Living Index	OECD/IMF
UNESCO World Heritage Sites	UNESCO
Biodiversity Index	Convention on Biological Diversity
Annual Average Rainfall	Food and Agriculture Organization
Number of National Certification Programs	Tourism2030
Number of Local Certification Programs	Tourism2030

For the completed regression, longitudinal data for each variable were averaged to create a data cross section for each predictor variable. This resulted in one value per variable per country. For predictor variables that already had only the one value recorded (Table 3.4), this was the one value per variable per country used in the regression.

This approach of aggregating the data was used for two reasons. As explained above, a motive behind this analysis was to determine which environmental indicators of a destination, if any, predict tourism visitation. Beyond this, a second, yet equally important motive, was to determine how certification impacts visitation. Both motives are novel concepts that have not been explored thus far in the current literature. When compiling the data, many of the environmental indicators chosen did not have longitudinal data available, nor did the presence of certification programs at the destination. With this in mind, I decided to aggregate the data in order to remove the

problems that the use of a longitudinal dataset would cause, particularly for the included environmental indicators and number of certification programs.

By aggregating the data, a technique that has been used in similar destination choice and decision-making studies (Hall et al., 2003; Karl, 2018), I was able to create models that were best suited to determining the predictive capacity of the included environmental indicators and certification on tourism arrivals, two of the main goals for these analyses. While aggregating the longitudinal data limits the predictive capacity of these models for indicators where longitudinal data was available, these aggregate models are still capable of identifying relationships that exist between the predictors and tourism visitation. It was for these reasons that I decided to aggregate the data and complete regressions using these aggregate data.

Safety and Security Predictor Variables

All safety and security predictor variables included in this study were selected to represent the major travel risks often considered in a tourist's decision-making process (Fuchs and Reichel, 2011). Beyond the traditional travel risks, basic demographic and economic variables such as: population; population density; total GDP; and GDP per capita; were also included in regressions to represent some of the general characteristics of these selected nations, a common practice in models of these types (Floyd and Pennington-Gray, 2004). While some safety and security predictor variables were relatively straightforward in their selection due to the direct connection to the travel risk they represented (e.g., the political stability index representing the political stability travel risk), other travel risks had several potential options for predictor variables and ultimately only one of these options was included in order to simplify these regressions.

One example of a travel risk that could be interpreted many ways and represented through several potential predictor variables is health risk (Jonas et al. 2011). While many factors contribute to health risk and it is an overall complicated risk to quantify, I decided to utilize Disability Adjusted Life Years (DALYs) as the predictor variable in these regressions. This decision was made because of the ability of DALYs to best represent the overall state of health in a destination and account for most types of illness and disease and the prevalence of these health concerns (WHO, 1994). DALYs take into consideration all types of illness and disease present within a population and the possibility of an individual contracting one (or multiple) or these. From this information, an average life expectancy is calculated. While this may not seemingly be related to tourism, it is one of the only indicators available that encompasses multiple diseases and illnesses into its calculation, making it a prime candidate as a predictor variable for health risk since tourists can potentially be exposed to multiple disease and illness types.

Continuing, the ease and cost of travel to selected destinations were also variables that could have been represented through several methods. Ultimately, the approach chosen to represent cost of travel was through the cost of airline flights to these destinations. Since this study assesses tourism globally, it was important to represent the cost of flights from several tourism markets. The United States, the European Union, and China represent the three largest tourism markets globally. To represent each of these markets in the regressions, one airport was selected in each of these three areas and flight costs were recorded from each of these airports to the major international airport in all selected destinations. Since time of year is a major component in flight costs due to peak

travel times differing based on destination, flight costs included in regressions were those observed from peak travel season for each destination.

Lastly, for the travel risk of crime, theft rate and homicide rate were the predictor variables ultimately chosen for inclusion in regressions. While many crime indicators exist that would have served the purpose in these regressions, theft and homicide rates are the predictor variables often utilized in decision-making and destination choice research so this study is in line with this precedent (Dimanche and Lepetic, 1999). Additionally, when examining other potential crime indicators, many other options had missing data, suggesting that they would not have been good variables to include in these analyses.

Environmental Predictor Variables

As can be seen in Table 3.3 and Table 3.4, several environmental predictors were included in this study: total number of endangered species (including mammals), number of endangered mammal species (as separate predictor), a biodiversity index, number of UNESCO Natural World Heritage Sites, and annual average rainfall, which was chosen due to research suggesting that annual rainfall is a better climate predictor for total biodiversity when compared to other options (Guisan and Thuiller, 2005). However, since environmental indicators have not been studied in this context previously, there was limited guidance available from the literature in regard to which indicators should be included. Because of this, selected environmental indicators do not represent an exhaustive list of all options and those included in analyses were chosen with the intent to represent a majority of the factors one might consider when choosing a nature tourism destination, but do not represent all things one might consider.

Explaining why each environmental indicator was selected, all nature tourism and ecotourism destinations involve some form of activity in a natural setting and many revolve around viewing wildlife (Luo and Deng, 2008; Beh and Bruyere, 2007). Because of this desire to view wildlife in their natural habitat, it was necessary to include predictor variables that represented the amount of wildlife present in a destination and to determine if and how biodiversity impacts destination choice. While several possible predictors exist, a predictor variable that represented the total biodiversity of a destination was desired. This was chosen to be the Convention on Biological Diversity's Biodiversity Index (Table 3.4). Beyond this index, the literature also suggests that many nature and ecotourism destinations are characterized by the endangered species often endemic to particular nations and that these endangered species are a major attraction for visiting tourists (Akama and Keite, 2003). Furthermore, characteristic megafauna are also known to be a big tourist attraction (Kerley et al. 2003). Because of this, the total number of endangered species and the total number of endangered mammal species were both included as predictors (Table 3.3) to determine if one, or both, predicts visitation to the selected destinations. Moving away from biodiversity, a destination's climate was also considered to be a potential factor in destination choice (Bansal and Eiselt, 2003). While several climate indicators could have been used, average annual rainfall was used in these analyses (Table 3.4) due to the belief that rain may deter tourists from visiting a particular destination and may persuade them to choose an alternative destination. Furthermore, rainfall is highly correlated with biodiversity (Ogotu et al. 2008), meaning that rainfall could potentially be a substitute for biodiversity pending preliminary results. Lastly, UNESCO Natural World Heritage Sites were included to represent other natural

attractions at a destination that are not necessarily tied to wildlife, but that can still be major tourist attractions within a destination (Table 3.4).

Statistical Methods

All analyses were completed in IBM SPSS Statistics 26. While these analyses ordinarily indicate the use of a logistic regression, I opted to use and report results for linear regressions because when comparing regression results from both types, while overall results tended to be the same, linear regressions overall performed better and resulted in stronger relationships between variables. This indicated that linear regression in this instance provided higher explanatory power.

Prior to completing the multiple linear regression, all data was tested for normality, homoscedasticity, and multicollinearity to ensure that all assumptions for multiple linear regressions models were met. Normality and homoscedasticity were tested for each predictor separately as well as for each multiple regression completed by graphing the resulting residuals from each model. Normality was visualized by assessing a P-P plot and homoscedasticity was assessed by graphing predicted values (x-axis) vs. residuals (y-axis). All predictor variables and resulting multiple regressions met both assumptions.

For multicollinearity, an initial Pearson Correlation Test was completed to determine which predictor variables were highly correlated with each other. This correlation test was completed without including the outcome variable as was suggested in previous studies (Mansfield and Helms, 1982). After predictor variables highly correlated with one another were identified ($p < 0.05$), a regression was completed for each variable separately to identify which of those correlated with each other had the

highest explanatory power when compared to the outcome variable. After each regression was completed, the predictor variable with the highest explanatory power was kept and utilized in the model while all those correlated with it were removed.

Once all correlated variables were removed and multiple linear regressions were completed, variance inflation factor (VIF) values were calculated for each regression. VIF values are a collinearity statistic that represents an alternative approach to identifying multicollinearity in a multiple linear regression. As suggested in the literature, VIF values should be kept under a value of 5 for each predictor variable included in the model (Alin, 2010; Graham, 2003). If VIF values were over a value of 5, further variables were removed or a different combination of variables was identified.

Multiple Linear Regressions

Once resulting VIF values were at satisfactory levels and regressions completed met all assumptions of multiple linear regressions, a total of three multiple regressions were chosen to be included in these analyses. These three models best demonstrate the findings of this study and each incorporates a different set of predictor variables to explore what most impacts destination choice for nature and ecotourists.

The first model, referred to as the base model, includes the three predictor variables that regardless of the combination of variables, always resulted in a significant p-value. It is meant to represent the variables that are potentially most considered by tourists in destination choice when destinations are limited to nature and ecotourism destinations. The second model builds upon the base model, and includes predictor variables that represent traditional safety and security travel risks. This second model is meant to compare how these traditional safety and security risks, those that are most

often cited in the literature, impact the tourist decision-making process for nature and ecotourism destinations. This second regression allows for the comparison of these risks between nature and ecotourism destinations and traditional tourism markets. This allows for the examination of how these widely studied travel risks are considered differently in the decision-making process between traditional tourists and nature tourists. Lastly, since a motive of this study is to test the impact of certification on the decision-making process and destination choice, the third model presented includes the presence of certification programs within each destination and explores the impact that the existence of these programs has on destination choice.

RESULTS

Pearson Correlation Test

Based on the Pearson Correlation Test completed with all predictor variables, it was found that there was high correlation between several sets of variables. The first set of highly correlated variables were: GDP per capita PPP, GNI per capita PPP, Cost of Living, Corruption, Political Stability, and Theft (Table 3.5). Based on these correlations, individual regressions completed with each of these variables determined that GNI per capita PPP had the highest explanatory power and was the predictor variable chosen to represent this larger group in the resulting multiple regressions.

Table 3.5.

Pearson Correlation Test demonstrated high correlation between variables. GNI per capita PPP resulted in highest explanatory power when used in regression. Correlation test was completed without including the outcome variable in order to estimate how predictor variables were correlated independent of the outcome variable. Once correlated variables were identified, separate linear regressions were completed for each predictor variable to estimate explanatory power relative to the outcome variable, international tourism arrivals. ** denotes significance at the $p = 0.01$ level.

	GDP per capita PPP	GNI per capita PPP	Cost of Living	Corruption	Political Stability	Theft
GDP per capita PPP	1	.998**	.894**	.914**	.794**	.861**
GNI per capita PPP	.998**	1	.889**	.909**	.784**	.868**
Cost of Living	.894**	.889**	1	.778**	.759**	.705**
Corruption	.914**	.909**	.778**	1	.866**	.896**
Political Stability	.794**	.784**	.759**	.866**	1	.798**
Theft	.861**	.868**	.705**	.896**	.798**	1

The second set of highly correlated variables were: Population, GDP, Number of International Points of Entry, and Total U.N. Heritage Sites (Table 3.6). Following regression analysis, it was discovered that population had the highest explanatory power out of these correlated variables. From these analyses, population was chosen to be included in the final regression models presented.

Table 3.6.

Pearson Correlation Test demonstrated high correlation between variables. Population predictor variable chosen to represent overall group in regression analyses. Correlation test was completed without including the outcome variable, international tourism arrivals. Separate linear regressions were completed with each correlated variable to estimate which variable to use in resulting multiple linear regressions that best represented this larger correlated group. ** denotes significance at the $p = 0.01$ level.

	Population	GDP	# of Entry Points	Heritage Sites
Population	1	.652**	.805**	.788**
GDP	.652**	1	.898**	.899**
# of Entry Points	.805**	.898**	1	.847**
Heritage Sites	.788**	.899**	.847**	1

The last pair of highly correlated variables was total number of endangered species and number of endangered mammal species ($R = 0.828$, $p < 0.01$). Individual regressions demonstrated that total number of endangered species had a slightly higher explanatory power, and as a result number of endangered mammal species was removed from the multiple regression.

Preliminary Multiple Linear Regressions

Preliminary regressions utilizing remaining predictor variables (those not removed after Pearson Correlation Test) demonstrated several predictor variables had minimal explanatory power when included in regressions. These predictor variables were: U.S. Flight Cost, Europe Flight Cost, China Flight Cost, U.N. Natural Heritage Sites, Population Density, Biodiversity Index, and Annual Average Rainfall. Because each of these predictor variables did not benefit the model, these were removed.

Final Multiple Linear Regressions

After addressing multicollinearity across predictor variables and removing predictor variables that had little to no explanatory power, a total of 15 predictor variables were removed from the analyses. The resulting base multiple linear regression for this study predicted international tourism arrivals based on a destination's population, GNI per capita PPP, and total number of endangered species, the predictor variables found to have the highest explanatory power while also each representing a different characteristic (or group of characteristics) for each destination nation (Table 3.7).

Table 3.7.

International tourism visitation to nature and ecotourism destinations is most impacted by a nation's population, GNI per capita PPP, and number of endangered species.

Multiple linear regression was completed with tests for multicollinearity. Regression indicates no multicollinearity and that all predictor variables have a positive relationship with the outcome variable, international tourism arrivals. A significant regression equation was found ($F(3,27) = 11.349, p < 0.001$), with an R^2 of .558.

Variable	B	Std. Error.	Significance	VIF
Constant	546036.67	688338.63	0.435	-
Population	0.01	0.002	0.005	1.213
GNI per capita PPP	83.2	20.844	0.001	1.069
IUCN Endangered	4509.12	0.371	0.015	1.248

A significant regression equation was found ($F(3,27) = 11.349, p < 0.001$), with an R^2 of .558. Data suggest that a destination's predicted international tourism arrivals is equal to $546036.67 + .01(\text{Population}) + 83.2(\text{GNI per capita PPP}) + 4509.12(\text{Endangered Species})$. Population ($p = 0.005$), GNI per capita PPP ($p < 0.001$), and total number of

endangered species ($p = 0.015$) were significant predictors of international tourism arrivals. VIF values were all around a value of 1, suggesting little to no multicollinearity between variables.

A second multiple regression completed with the base model used as a foundation assessed the influence of several travel safety and security risks on international tourism arrivals. These additional variables were the terrorism index value, the national homicide rate, the natural disaster risk index value, and the DALYs for each destination (Table 3.8). Each of these additional variables included represents a different travel risk often considered in the decision-making process.

Table 3.8.

Common travel safety and security risks are not driving factors that influence tourism visitation to nature and ecotourism destinations. Four predictor variables (Terrorism Index, Homicide Rate, Natural Disaster Risk, and DALYs) were added to the base regression for a total of seven predictor variables included in the regression. Multiple linear regression with test for multicollinearity was conducted and results indicate that multicollinearity is minimal and no added predictor variables significantly impacted tourism arrivals. A significant regression equation was found ($F(7,22) = 4.871, p = 0.002$), R^2 value of .608.

Variable	B	Std. Error.	Significance	VIF
Constant	-1222182.22	1711082.8	0.483	-
Population	0.01	0.002	0.014	1.595
GNI per capita PPP	112.12	35.18	0.004	2.856
IUCN Endangered	5672.55	1982.83	0.009	1.492
Terrorism Index	-42251.75	223514.13	0.852	1.807
Homicide Rate	10846.89	24005.92	0.656	1.415
Natural Disaster Risk	72691.003	82748.61	0.389	1.649
DALYs	39.28	35.08	0.275	1.673

With these additional predictor variables, a significant regression equation was found ($F(7,22) = 4.871, p = 0.002$), with a resulting R^2 value of .608. Population ($p = 0.014$), GNI per capita PPP ($p = 0.004$), and total number of endangered species ($p = 0.009$) were significant predictors of international tourism arrivals, while terrorism ($p = 0.852$), homicide ($p = 0.656$), natural disaster risk ($p = 0.389$), and DALYs ($p = 0.275$) did not significantly predict tourism arrivals. While VIF values were slightly higher in this regression, VIF values were still below a value of 5, which suggests limited multicollinearity between variables (Chatterjee et al. 2000).

A third and final regression was completed to assess the influence of tourism certification programs on destination choice. The variables included in this regression were those used in the second model with the number of existing national-level certification programs and the number of existing local-level certification programs at each destination added as predictor variables (Table 3.9).

Table 3.9.

Existence of ecotourism certification programs within a destination do not alter a tourist's destination choice. Number of national certification programs and local certification programs in each destination nation were added to the regression to determine the impact of certification on tourism visitation. Conducted linear regression suggests no multicollinearity and additional predictor variables did not add explanatory power to the overall regression. A significant regression equation was found ($F(9,22) = 7.831, p < 0.001$), with an R^2 of .61.

Variable	B	Std. Error	Significance	VIF
Constant	-938.525	736917.809	0.999	-
Population	0.007	0.002	0.002	1.627
GNI per capita PPP	83.455	28.163	0.002	2.482
IUCN Endangered	5169.667	1864.817	0.011	1.503
Terrorism Index	-45418.29	195931.16	0.831	1.624
Homicide Rate	9274.93	28615.67	0.614	1.385
Natural Disaster Risk	77832.38	101439.24	0.438	1.348
DALYs	32.41	41.02	0.292	1.531
National Certification	664761.324	519314.642	0.243	1.185
Local Certification	-1108595.969	909082.878	0.256	1.857

With the inclusion of these additional predictors, a significant regression equation was found ($F(9,22) = 7.831, p < 0.001$), with an R^2 of .61. In this multiple linear regression, population ($p = 0.002$), GNI per capita PPP ($p = 0.002$), and total number of endangered

species ($p = 0.011$) significantly predicted international tourism arrivals while terrorism ($p = 0.831$), homicide ($p = 0.614$), natural disaster risk ($p = 0.438$), and DALYs ($p = 0.292$) did not significantly predict tourism arrivals.. The number of national-level certification programs ($p = 0.243$) and local-level certification programs ($p = 0.256$) existing at a destination were not significant predictors. VIF values indicated no multicollinearity between predictor variables.

DISCUSSION

Comparing these results to the existing tourist decision-making and destination choice literature, there is a stark difference between these findings and the suggestions and findings presented in previous research. First, this study found that a destination's GNI per capita, population, and total number of endangered species within the destination were the largest drivers influencing tourism arrivals. This differs from existing research in that my findings suggest that the overall demographic, political, economic, and environmental characteristics of a destination are the biggest predictors of tourism visitation instead of safety and security travel risks (Lepp and Gibson, 2003; Fuchs and Reichel, 2011).

One caveat is that this study solely utilizes destinations recommended through popular travel sites and does not include all nations globally. Because of this selection process, the destinations selected for inclusion in these regressions were more safe than other possible destinations worldwide. With this in mind, this study may not counter the literature and show that factors other than safety and security have a greater impact on destination choice for nature and ecotourism destinations. Instead, my analysis demonstrates that once a nation reaches a certain threshold of safety and security, tourists

are willing to travel to that destination and any incremental improvements in safety and security do not alter visitation and therefore do not impact the tourist decision-making process.

Base Model Explanation

Beginning with the impact of GNI per capita PPP on tourism visitation, gross national income demonstrated a positive relationship with tourism visitation. In other words, as GNI per capita PPP increased, so did tourism arrivals. Beyond this relationship with the outcome variable, GNI per capita PPP was found to be correlated with several other predictor variables, some of which included traditional travel risk indicators such as Corruption Index, Political Stability Index, and Theft Rate. Because of this correlation between predictors, it can be assumed that the impact of these safety and security travel risks are encompassed within GNI per capita PPP and can still play a role in destination choice. However, when examined via regression, none of these other variables significantly predicted tourism arrivals and none had the explanatory of GNI per capita PPP. This suggests that the economic state of a destination plays a significant role in a nature tourist's and ecotourist's decision-making process. This can be related to a higher economic capacity representing the ability of a destination to offer a superb tourist experience (Bekk et al. 2015). In addition, because GNI per capita PPP was highly correlated to several safety and security travel risks, it can be said that destinations with a larger per capita economy are also capable of offering a destination that is safer (Devine and Devine, 2011).

The total population of a destination also proved to significantly predict tourism arrivals. As the population of a destination nation increased, so did number of tourism

arrivals. Following the Pearson Correlation Test, population was highly correlated with total GDP, number of international points of entry, and the number of UNESCO World Heritage Sites found within the destination. None of these correlated variables represent safety and security travel risks directly, but were instead included to represent either the ease of travel to the destination (number of entry points) or a potential environmental indicator that may draw tourists to the destination (number of UNESCO Heritage Sites). Neither of these correlated variables significantly predicted visitation, suggesting that for nature tourism and ecotourism destinations, ease of access into a destination and the number of UNESCO World Heritage sites are not factors considered in destination choice. Different from these other correlated variables, the total GDP of a destination was included in addition to several other economic predictors in order to determine which best explained the outcome variable. From the completed regressions of each predictor variable in this correlated group, a destination's total population had the highest explanatory power. While GDP also significantly predicted tourism arrivals, GNI per capita PPP was chosen because it better predicted visitation when comparing the two individually, while also eliminating multicollinearity since it was not correlated to total population.

Lastly, in terms of the base model, this study also finds that the total number of endangered species at a destination is the best environmental predictor of international tourism arrivals. Based on Pearson Correlation Test results and the results from preliminary regressions, the biodiversity index, number of UNESCO Natural Heritage Sites, and average rainfall did not significantly predict tourism arrivals, while number of endangered species and number of endangered mammal species did. While only the total

number of endangered species was included in the final regressions presented due to multicollinearity between variables, these findings suggest that for nature tourists and ecotourists, one of the major factors taken into consideration in destination choice is the opportunity to view wildlife in their natural habitat, especially endangered species. Other environmental indicators such as climate or other natural attractions are not as enticing to international visitors and do not greatly influence their ultimate destination choice.

Safety and Security Travel Risks

While GNI per capita PPP was correlated with some predictor variables that represent safety and security risks commonly considered in the decision-making process, several of the predictor variables were not eliminated through Pearson Correlation Test and were included in regressions to determine if any impact on visitation was observed. These predictor variables were Terrorism Risk, Homicide Rate, Natural Disaster Risk, and DALYs. Each of these predictor variables represents a different type of risk to tourists and each of these risk types are often cited in decision-making literature as strong influences in destination choice (Hall et al. 2003; Jonas et al. 2011; Huan et al. 2006).

When regressions included these traditional safety and security travel risks (Table 7), they had little to no predictive capacity relative to observed international tourism visitation. These results differ greatly from prior findings that safety and security travel risks are some of the most important factors considered in the decision-making process (Floyd, 2004; Rittichainuwat and Chakraborty, 2009). Since destinations selected for this study were all relatively safe destinations when compared to other nations globally, I hypothesize that once a destination achieves a certain level of safety and security, as each

of these destinations has, then any further increase in perceived safety does not impact visitation.

Prior to suggesting potential reasons why these traditional travel risks were not predictors of observed international visitation in nature and ecotourism destinations, it is important to distinguish the destinations included in this study from those excluded and expand on the point made in the previous paragraph regarding the safety of included destinations. From the very onset of this study, destinations were chosen based on their prevalence in travel blogs and sites. While I selected destinations based on them appearing on these sites a certain number of times in order to remove the possibility of a biased selection based on personal preference, it was often the case that many destinations overlapped across these used travel sites and blogs. Because of this selection process, it must be noted that travel sites may choose to focus on and highlight destinations that are overall perceived as “safe” by tourists.

If this is the case, then the destinations included in this regression are skewed toward those that have minimal safety and security travel risk. In other words, based on my destination selection process, if those suggested as destinations in travel sites already account for safety and security risks that tourists consider in their decision-making process, then the selection process itself removed all “unsafe” destinations from consideration for this study’s regressions. This means that most variation in safety and security predictor variables between destinations were also removed. If this is the case, then while the regressions do not find that safety and security risks influence destination choice, it may be that these risks still play significant roles in the decision-making

process. However, once a certain perceived threshold of safety is achieved, any increase in safety and security beyond this does not further influence destination choice.

Examining the lack of predictive ability of included safety and security risks further, one potential reason these factors did not explain observed international visitation as was expected is because this study focuses solely on destinations where a most tourism is characterized by nature tourism and ecotourism. It is a definite possibility that nature tourists and ecotourists are different from other tourist groups in terms of what factors they consider in their travel decision-making and destination choice processes. Based on this study's findings, factors taken into consideration may not just be the traditional safety and security travel risks commonly used, but a combination of those traditional risks with certain environmental indicators. This is observed through significant predictor variables being GNI per capita PPP, which was highly correlated with several safety and security risk predictor variables included in these analyses, and the total number of endangered species, which can be a proxy for the amount of biodiversity present in a destination and the availability of opportunities to see native and endemic wildlife within the destination.

Expanding further on this difference in the decision-making process between nature tourists and ecotourists from other tourist types, while a generalization, literature suggests that tourists that partake in nature tourism and ecotourism can be much more risk-taking when compared to other tourist groups (Mura, 2010; Lepp and Gibson, 2008). Nature tourists and ecotourists tend to be more adventurous and thrill-seeking than other tourist groups (Pizam et al. 2004). This is due to nature tourism and ecotourism often involving travel to remote locations and a greater amount of physical activity compared

to other tourism types. Beyond a greater amount of physical activity, nature tourists and ecotourists are often more willing to take risks in order to experience all that the destination and the natural world have to offer (Zuckerman, 2010). Furthermore, because nature tourism and ecotourism participants are primarily going to explore natural areas, nature tourists often pick a specific destination to have a particular experience (Fuchs, 2013). This combination of a higher risk threshold with the desire to visit a particular natural place creates a scenario where the traditional travel risks may not play as prominent a role in the decision-making process and destination choice for this tourist type.

Ease of Travel

In addition to exploring the impact that safety and security risks and environmental indicators have on destination choice, an additional goal of this study was to examine the role that ease of travel may play in the decision-making process. It has been found previously that besides the perceived risk of a destination being considered in the decision-making process, the monetary cost of visiting a destination may also influence destination choice (Bonera, 2008; Correia et al. 2011). In order for this study to fully encompass the complex decision-making process, it was necessary to include predictor variables that accounted for the potential cost of traveling to the destinations included in these regressions. Furthermore, since this study focuses on nature tourism and ecotourism destinations globally, and these destinations have become much easier to access over the past decade (Ballantyne et al. 2011), it is important to examine how and if ease of travel is a determinant in destination choice. The predictor variables included were: cost of living at the destination (a potential indicator of the cost of in-country

travel); the prices of round trip flights from the United States, Europe, and China (the three largest international tourism markets); and the number of points of entry at the destination.

When examining these predictor variables, although cost of living and number of points of entry were ultimately removed from regressions to avoid multicollinearity, both were highly correlated with predictor variables that were ultimately included in regressions and significantly influenced visitation. Because of this correlation between variables, it can be assumed that while not necessarily having a significant impact on tourism arrivals directly, these predictors do at least indirectly contribute to destination choice.

Exploring the role of flight prices in the decision-making process, none were correlated with other predictor variables and each was included in preliminary regressions to determine the general explanatory power of each. None of these three variables for flight price were found to predict international tourism arrivals, suggesting that the cost of travel to a destination is not a factor often considered by nature tourists and ecotourists in decision-making. These findings deviate from existing literature on overall decision-making, which often state that the cost of travel, particularly flights, can play a significant role in ultimate destination choice (Nicolau and Mas, 2006; Li et al. 2017). Instead, these findings further demonstrate that nature tourists and ecotourists may consider different factors in the decision-making process when compared to other tourist groups. Beyond considering different variables in destination choice, these findings may also suggest that nature and ecotourists may have higher economic status compared to other tourist types (López-Sánchez and Pulido-Fernández, 2016; Platania and Rizzo,

2018). With a higher economic status, ease of travel indicators will not be a large predictor in ultimate destination choice. These differences cannot be ignored and must further be explored in order to better identify what differentiates the decision-making process between tourist groups, ultimately impacting destination choice.

Ecotourism Certification Programs

Beyond determining the role that traditional travel risks and environmental indicators associated with a destination play in tourist decision-making, an alternative, yet equally important, objective of this study was to determine if the presence of ecotourism certification programs within the destination influences ultimate destination choice. Prior studies present conflicting conclusions regarding the role that certification can play in destination choice. Some argue that certification can draw tourists to a destination while others claim that certification plays an inconsequential role in the overall decision-making process due to the certification industry either being too convoluted with the existence of hundreds of programs or not being capable of effectively marketing to nature tourists and ecotourists globally (Esparon et al. 2014; Aguilar and Vlosky, 2007; Rowe and Higham, 2007).

This study aligns with the side of the argument that certification does not influence destination choice. Results indicate that neither national certification programs nor local certification programs within the destination significantly predicted tourism arrivals. With these findings, thought should be given regarding how to best promote certification programs to tourists in order to make the existence of these programs well known and useful to tourists in their decision-making process. While certification programs can potentially benefit the ecotourism industry by identifying operators that are

truly sustainable and meet the goals of ecotourism, these programs mean little if not identifiable and used by the consumer in decision-making.

Concluding Remarks

While research on tourist decision-making and destination choice is extensive, few studies have examined how these processes differ for nature tourism and ecotourism destinations globally (James et al. 2011). Studies that have attempted to address this research gap previously have primarily done so through surveys with tourists. They have focused on either a specific destination or a specific tourist group (Beh and Bruyere, 2007), making them restricted in scope spatially or by sample (Karl, 2018; Fuchs, 2013). This study utilizes a different approach to fill this gap and instead assesses destination choice using aggregate level data across destinations globally to test for overarching trends in nature and ecotourism destination choice and the variables that most coincide with observed international tourism visitation.

I found that tourists approach nature tourism and ecotourism destinations differently than other destination types. While many destinations are often judged relative to the perceived safety and security risks associated with them, destinations where a majority of tourism arrivals are nature tourists and ecotourists may not solely rely on these traditional considerations. Instead, they incorporate other factors into the decision-making process. Beyond taking further information into account, this study suggests that these additional factors are just as important relative to making a decision. Beyond the traditional safety and security risks, the ease of travel in getting to a destination is seemingly unimportant in the decision-making process for this tourist group, which is

contrary to findings in prior studies that have examined tourism overall and not nature tourism and ecotourism destinations (Lee et al. 2006; Garg, 2015).

This study's findings suggest that once a certain threshold of safety and security is reached, any increase in safety is no longer impactful. Nature tourism destinations are then examined and compared according to what they are able to offer tourists. This is done in terms of luxury and amenities, as is implied by destinations with a higher GNI per capita PPP attracting more visitors. Beyond amenities, nature tourism and ecotourism destinations are also compared based on the experiences that involve nature and the wildlife that tourists often travel to see, as is supported by destinations with a higher number of endangered species attracting higher tourist numbers (Uriely et al. 2007). From these results, it can be inferred that nature tourists and ecotourists often have a particular destination in mind from the beginning of the decision-making process and little can deter this tourist group from visiting that specific destination, differing from traditional tourists who often consider multiple destinations prior to deciding on their ultimate destination choice (Mansfeld, 2006).

Furthermore, this study also aims to contribute to existing certification literature by exploring the role that certification programs play in destination choice. While existing research can be found that both supports and refutes the claim that certification impacts the tourist decision-making process, my research suggests that the presence of certification programs does not predict tourism visitation and is not a variable tourists considered when selecting a destination. These findings are supported by previous research that found that tourists often are unaware of certification programs and/or operators certified under those programs. Based on these results, it is vital that

certification programs globally either adopt better marketing strategies, specifically in regard to attracting consumer attention, or consolidate programs and work together to achieve the common goal of ensuring ecotourism stays true to its promises.

Future studies can be done that further explore the roles that travel risks, ease of travel, environmental indicators, and certification programs play in nature tourism and ecotourism destination choice. This current study is limited in terms of number of destinations included, but can easily be expanded to include more destinations worldwide. Increasing the number of destinations would also benefit these analyses by allowing for a better examination of the role that travel risk plays in destination choice. As discussed earlier, destinations selected for these regressions were largely skewed toward being relatively safer when compared to other potential destinations. Incorporating more destinations will allow for an increase in variation within travel risk predictor variables, suggesting that a more accurate depiction of the impacts travel risks play in nature tourism destination choice would be achieved. Effort must be taken, however, to ensure that destinations chosen have nature and ecotourism representing a majority of the tourism present within the nation.

Furthermore, while this study utilizes average values across variables, a future study can be completed that utilizes a fixed effects panel regression and examines data longitudinally to better examine how fluctuations in visitation correlate with fluctuations in the perceived risks of travel. Through this method, longitudinal data across the time period would be used as a panel data set rather than aggregating the data down to a single value. Fixed effects would then be used for all predictor variables where only one value was used rather than longitudinal data.

Beyond a more comprehensive longitudinal analysis that accounts for fluctuations in values over time, it may also be worth exploring how varying the value of fixed effects values alters model outcomes. For example, the models in this analysis utilized one flight cost from three major tourism hubs. These predictors can be further explored by altering the costs of flights (which happens on a daily basis), or by incorporating more transportation hubs, both of which would allow for a more in depth analysis of the predictive capacity of flight costs on tourism arrivals. A strategy such as this can be used for other fixed effects variables as well.

CHAPTER 4

ECOTOURISM ACCOMMODATIONS AND CERTIFICATION PROGRAMS:

VIEWPOINTS AND IMPACTS

INTRODUCTION

Overview

As ecotourism continues to grow globally, it is vital that the industry ensures that it is staying true to its goals of providing opportunities for sustainable development while conserving the natural environment. One way this is currently being accomplished is through the support of ecotourism certification programs, which assess applying ecotourism businesses and award benefits to those that meet the standards and criteria for that program. This chapter focuses specifically on the certification of ecotourism accommodations and analyzes the impacts and perspectives of certification in regard to both certified and uncertified accommodations. The goal from these analyses is to develop an understanding of how certification itself has impacted ecotourism accommodations, determine if operational differences in terms of sustainability do in fact exist when comparing certified and uncertified accommodations, and to discern if certification is truly identifying the ecotourism accommodations that are best representing the goals of the industry. To accomplish this, I use Costa Rica and their Certificate for Sustainable Tourism as a case study.

Ecotourism

Today, ecotourism is advertised in most countries around the world, and accounts for a large proportion of gross domestic product in some countries, particularly developing nations, due to its believed ability to protect human and environmental

conditions while simultaneously promoting economic advancement for individuals and local communities (Vinodan and Manalel, 2011; Fennell, 2020). Beyond being heavily relied on by countries in their economic development plans (Amalu et al. 2017), ecotourism is expanding globally and becoming one of the most popular tourism types in the world as destinations that were once difficult to visit are becoming more accessible to tourists (Ute and Kesinee, 2017; Amalu et al. 2018).

While defining ecotourism is an ongoing debate, the most commonly used definition comes from The International Ecotourism Society: ecotourism is “responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education” (TIES, 2015). While this definition is not agreed upon by all in the field, experts agree that ecotourism overall can be characterized by tourists visiting and experiencing natural areas, and through this process ultimately contributing, either directly or indirectly, to local conservation efforts and economic development (Ziffer, 1989; Bjork, 2000; Donohoe and Needham, 2008).

Broadly speaking, ecotourism is, in practice, a low-impact alternative to traditional tourism and should contribute positively to the social, economic, and environmental development of the destination while still ensuring that the overall cultural identity of the local community stays intact (Sangpikul, 2017; Roxe, 1998). Because these benefits rely heavily on the types of activities available to tourists and the infrastructure in place, these benefits can vary both in type and scope. However, as this industry continues to grow and the demand for this tourism type increases, the ability of ecotourism to develop sustainably becomes more difficult. Research demonstrates that

ecotourism may in fact lead to negative impacts and consequences for local communities and the environment (Sangpikul, 2011; Isaacs, 2000; Ritchie, 1984).

Examples of positive social benefits of ecotourism include simple host-visitor interactions such as practicing the local language, learning local customs, or some form of social assistance such as volunteering at a school or ongoing project (Kontogeorgopoulos, 2004). These benefits can either be formally set up through tour operators in the area or can simply occur through visitor exploration of the destination. Beyond visitors learning about the local culture and potentially aiding in the development of the community through volunteering, these host-visitor interactions can also act as a form of cultural preservation and further benefit local communities by allowing them the opportunity to continue customs that may have otherwise dissipated (Sangpikul, 2015).

Research has also focused on examining the negative impacts of ecotourism at the local level and the attitudes of those in the host community towards ecotourism and tourists (Mason and Cheyne, 2000; Almeida Garcia et al. 2015). Some of the negative consequences of ecotourism from a social standpoint include: an increase in vandalism and crime (Andereck et al. 2005); increase in traffic and overall congestion in tourism destinations (Dyer et al. 2007); and friction between tourists and locals due to cultural differences (McCool and Martin, 1994).

In regard to economic benefits, ecotourism is intimately tied to the natural world and there are many activities tour operators offer that allow tourists to experience these natural places such as hikes, wildlife viewing, or canoeing to name a few (Cheung and Fok, 2014). Tour operators capitalize on these opportunities and through this, recruit local employees and contribute to the local economy by generating revenue and wages.

This contribution to the local economy is seen not only through these offered environmental activities, but also through jobs created in the hospitality and restaurant industries within these communities (Hunt et al. 2014). Beyond direct economic stimulation by employing local people, ecotourism operators can further aid in economic development by purchasing goods and services from local suppliers/distributors and advertising other local businesses to visiting tourists (Snyman, 2014). Furthermore, tourists themselves directly contribute to economic development through the purchase of souvenirs and crafts produced and sold by local businesses, dining at local restaurants, or in the case of ecotourists, donating to local philanthropic causes (Spenceley, 2008).

Unfortunately, these economic benefits are not always universal. Ecotourism often has distinct seasons with a majority of tourists visiting in certain portions of the year (Edward Taylor et al. 2003). These periods vary depending on the destination. Due to the innate seasonality of the ecotourism industry, ecotourism jobs may often also be seasonal and tourism operators may only employ large numbers of locals during the busy months (Manwa and Manwa, 2014). Furthermore, research also suggests that the presence of ecotourism may lead to an increase in the wealth disparity within a community, with only a small portion of community members capturing the benefits of ecotourism (McGahey, 2012). Explaining this increase in wealth disparity, community members involved in ecotourism may receive more economic benefits than those members not involved in ecotourism (Kiss, 2004). This shift in wealth dynamics can potentially force those community members not involved in ecotourism to be economically worse off than before ecotourism existed in their community (Scheyvens, 2009).

Lastly, regarding environmental benefits, ecotourism should actively contribute to the conservation of natural resources and ecotourism operators should be directly involved with the conservation of these resources (Diamantis, 1999). This can be done through several options, some being the protection or preservation of private land, through the creation of funds that aid in conservation efforts locally, or through community education efforts related to conservation and sustainability (Zambrano et al. 2010). Conservation efforts aside, with the natural world being the main economic generator in ecotourism dependent areas, it is vital that tourism operations do not overexploit the natural resources on which the industry, and the community at large, depend (Sangpikul, 2011).

As the demand for ecotourism increases, however, research demonstrates that the environmental consequences of ecotourism may also increase (Kaur, 2006). These negative environmental impacts can be direct impacts such as an increase in infrastructure to support this increased tourism demand (e.g., buildings, roads, nature trails, etc.), or simply the impacts that increased visitation has on natural areas (Buckley, 2009). Some examples of impacts due to increased visitation can be the introduction of invasive species or a decrease in observed wildlife due to increases in noise disturbances (Charnley, 2005). Or, these impacts can be indirect such as the changes to animal behavior and stress levels caused by increased human presence or the contribution to climate change that inevitably is associated with increases in tourism as more people travel internationally (Becken and Hay, 2007).

Certification

To combat the negative consequences of ecotourism and identify tour operators that best represent the principles of ecotourism in an effort to fight against greenwashing within the industry, certification programs were developed over the past few decades (Spenceley, 2018). To date, there are approximately 178 ecotourism-specific certification programs (DESTINET, 2019). While certification criteria are program-specific and a wide array of programs exist, the most commonly cited definition is that certification is a “voluntary procedure that assesses audits and gives written assurance that a facility, product, process or service meets specific standards. It awards a marketable logo to those that meet or exceed baseline standards” (Honey and Rome, 2001). Through the process of certification, the aim is to encourage and promote responsible sociocultural, economic, and environmental behavior within the ecotourism industry and mitigate the negative externalities that are commonly found in ecotourism, while simultaneously providing a quality product and experience to tourists (Dodds and Joppe, 2005; Melo and Wolf, 2005).

Certification programs in the ecotourism industry can certify ecotourism operators in any sector of the tourism industry, ranging from accommodations to tour guides, and in some cases, entire destinations (Honey, 2002). While programs can choose to certify operators across multiple sectors, many often choose to focus on one specific operator type, with this sector typically being accommodations (Font and Buckley, 2001). Because of this focus on accommodations across the ecotourism certification program industry, this study chooses to align with this observed trend and focuses on accommodations for these analyses.

Assessing previous studies on ecotourism certification and accommodations, the literature claims that certification can aid ecotourism businesses in identifying points of weakness and ultimately lead to performance and sustainability improvements for the business (Denman, 2010; Ponnareddy et al. 2017). Furthermore, for accommodations specifically, proponents of certification argue that participation in certification programs can help an accommodation:

- reduce operating costs, mainly through the incorporation of energy- and resource-saving technology;
- gain industry-led recognition for a commitment to sustainable tourism;
- identify means of improvement for internal management and operation processes;
- develop partnerships with travel agencies and tour operators globally;
- and, depending on the program, can gain tax benefits or reductions in participation costs in travel and trade shows (Ayuso, 2007; Rome, 2005; Bien, 2005).

Many of these benefits, combined with use of the certification logo, are then related to the ability of certification to provide accommodations with the opportunity to increase business and sales by appealing to eco-conscious tourists and tour operators, leading to an increase in accommodation occupancy (Lebe and Zupan, 2012; Esparon et al. 2014).

Despite these claims of the benefits of certification, previous research has yet to confirm their validity. Research has demonstrated, however, that limitations and constraints to certification do exist (Spenceley and Bien, 2013). For example:

- The existence of many certification programs globally leads to overall confusion in the industry and makes it difficult for tourists and tour operators to distinguish

between programs and understand what each program represents in terms of ecotourism and sustainability (Ko, 2005)

- Although the industry overall has adopted certification programs as the assessment tool most commonly used to distinguish best practices, only a small percentage of ecotourism accommodations overall have chosen to participate in certification programs, suggesting that certified has not adequately penetrated the accommodation market (Weaver, 2009)
- While demand for sustainable products in the tourism industry is prominent (Millar et al. 2012), a large proportion of tourists are unaware of certification programs, and even fewer are knowledgeable enough to identify and actively select certified accommodations for their needs (Karlsson and Dolnicar, 2016; Sasidharan et al. 2002)

With these limitations in mind, research suggests that certification does not attract the number of tourists it claims, going against the competitive advantage that certification programs rely on to attract participants (Ayuso, 2006; Klein and Dodds, 2017).

Costa Rica

Costa Rica is a case study that I will explore in depth. While a plethora of ecotourism certification programs exist, Costa Rica was selected due to it representing a major nature and ecotourism destination globally with a large proportion of tourists being nature tourists and ecotourists. Furthermore, since ecotourism is often described as a development tool that many developing nations use, I wanted to select a destination that is a developing country, a category that Costa Rica fits within. Lastly, a case study was desired that is not only represented by a large body of ecotourism research literature, but

also a case study where the prominent certification program has existed for at least 15 years (as of 2020). This timeframe was chosen due to my belief and hope that this amount of time would allow for a certification program to develop fully and gain traction within the ecotourism industry, while also allowing for an amount of time where the impacts of certification programs themselves could be more easily identified. With this desire for a case study where the ecotourism industry has been highly studied previously, combined with the existence of a certification program that has existed for at least 15 years, Costa Rica was one of very few options that met all requirements.

The Certificate for Sustainable Tourism Program (CST) is Costa Rica's ecotourism certification program and is the certification program assessed through this research study. The CST started in 1997 and was one of the first certification programs (Essential Costa Rica, 2016). This program was initiated and is currently operated by the Costa Rican Tourism Institute (ICT), a governmental organization, and all certifications are given through the Costa Rican based National Accreditation Commission, a third-party assessor (CST, 2020a). Because this program is operated and managed by the Costa Rican government, it is subsidized by governmental funds, making this program one of the only tourism certification programs in the world that is entirely monetarily free to participants (CST, 2020a). The CST not only certifies accommodations, but it also certifies travel agencies, tour guides, car rentals, and theme parks. However, since this study focuses entirely on the certification of accommodations, all further description of the CST will focus entirely on the certification process for accommodations.

In 2018, the CST underwent changes and developed a new certification process that replaced the original that had existed since 1997 (CST, 2018). Some changes that

occurred under this new program were the reduction of certification levels from five to two and a change in the scoring scheme used to determine certification status. Under the old process, the CST had four categories that were all scored individually and within each of these categories was a set of questions/indicators that were weighted equally (Lapa Rios, 2016):

- Biological/Physical Environment (i.e., biodiversity conservation initiatives)
- Accommodation Operations/Management (e.g., electricity/water use, waste production)
- Tourist/Visitor Initiatives (i.e., tourist education and volunteer programs)
- Socioeconomic Impacts (e.g., employment statistics, support of other local businesses)

Based on the independent audit results, a percentage score was given in each of these four categories based on the number of questions/indicators within that specific category that the accommodation satisfied. After these percentages were calculated, the accommodation was certified based on the category with the lowest percentage score, not on a composite percentage across categories (CST, 2016). For example, if an accommodation scored 100% in three categories and 40% in the fourth category, that accommodation was awarded the certification level that corresponded with 40%.

Under the new process proposed and passed in 2018, the CST now utilizes four major categories (CST, 2018):

- 1) Business Management – Sustainability Practices and Technology Used (e.g., solar panels, water conservation, waste management)

- 2) Social, Economic, and Cultural Impact – Community Relations and Philanthropic Initiatives (e.g., employment of local people, women’s empowerment and equality, education initiatives, support of other local businesses)
- 3) Environmental Impact – Accommodation’s Response to Local/Global Environmental and Conservation Issues (e.g., climate change and emissions, ecosystem protection, biodiversity conservation, conservation of endemic species)
- 4) Specific Indicators – Further Indicators of Accommodation Impacts and Guest Relations (e.g., technology/operations for visitors with disabilities, availability of information on accommodation initiatives and impacts to guests, secondary indicators of social, economic, and cultural impacts)

Within each of these four categories, questions are split into three indicator groups (CST, 2018):

- 1) Mandatory – Indicators that must be met to achieve certification with no exceptions;
- 2) Improvement and Continuity – Indicators that aid in helping the accommodation improve for future evaluations and the recertification process;
- 3) External Impact – Secondary indicators that focus on how accommodations support the local community and surrounding natural areas.

Applying accommodations are audited via an independent third-party assessor and scored in each of the above four categories individually. Certification is awarded only if a certain threshold is reached for each category separately. Based on the outcome of the audit, there are two levels of certification possible, basic and elite. The basic level is awarded when there is full compliance with mandatory indicators across all four

categories. Elite, the higher of the two levels, is achieved when there is full compliance with all mandatory indicators as well compliance with 30% of the Improvement and Continuity indicators and 70% of the External Impact indicators across all four categories. Anyone achieving either the basic or elite rating can use the certification logo on promotional and marketing materials, and certification lasts for two years before a renewal is necessary (CST, 2018).

Assessing the accommodation industry in Costa Rica overall, there are currently 243 certified accommodations out of the approximate 2,600 in Costa Rica overall (CST, 2020b; Central America Data, 2016). At the time of writing this paper, since the CST is still transitioning to the new certification structure, a breakdown of accommodations by certification status is not possible as there are currently accommodations certified under the old and new CST guidelines.

Research Gaps, Questions and Hypotheses

Beyond a lack of research supporting the claims of certification, the certification literature identifies multiple research gaps that must be addressed in order to determine the efficacy of certification both in terms of increasing sustainability of the industry overall as well as the ability of certification to increase visitation to participating accommodations. These research gaps include the expansion of field research on certification programs themselves from the perspective of accommodations and furthering the study of the sociocultural, economic, and environmental impacts of ecotourism and certification programs overall (Brandt and Buckley, 2018; Weaver and Lawton, 2007). Furthermore, the success of certification depends on the satisfaction of those who participate in these programs. To date, there is little research that assesses the

satisfaction level of certification program participants (Esparon et al. 2014). Lastly, to my knowledge, there is no research that examines and compares certified accommodations to uncertified accommodations in terms of visitation, corporate social responsibility, and operational strategies. Without this comparison, it is difficult to not only validate if certification truly leads to an increase in accommodation occupancy, but it also makes it almost impossible to justify the claims that certification identifies those accommodations that best represent the principles of ecotourism. While certification can also be assessed from the perspective of the consumer, this study aims to test if and how certified accommodations are different from uncertified accommodations and obtain an understanding of certification and its impacts from within the industry itself. Within the certification literature, consumer knowledge and willingness to pay is one of the most popular topics addressed (Chafe, 2007; Waltz, 2008; Hwang and Lee, 2018), so this study aims to fill alternative, yet equally important, research gaps.

To address the research gaps stated above and contribute to the existing body of literature on certification programs, I assess certification programs from the viewpoint of accommodations and aim to answer several research questions through the lens of qualitative research. Specifically, I utilized an online survey and conducted semi-structured interviews, both completed with the participation of certified and uncertified accommodations.

Qualitative research techniques have not been widely used in ecotourism certification research, which is a critical deficiency in available research (Almeida Garcia et al. 2015). Since qualitative research can be used to develop a more in depth understanding of a topic, especially when studying attitudes and opinions of individuals

and businesses (Sharpley, 2014), this study uses available methods to uncover how the accommodation industry in Costa Rica has changed over the previous decade while also addressing the opinions of the CST from the perspective of accommodations. The research questions addressed in this study are:

- What specific incentives, or perceived benefits, are the main reasons accommodations apply for certification? If not certified, what are some reasons accommodations choose not to apply?
- What differences in viewpoints, if any, of certification programs exist between certified and uncertified accommodations?
- Does certification (or lack of) alter visitation? Do accommodations attribute observed changes in visitation to certification?
- Does a difference in sustainability and conservation, in terms of both principle and practice, exist between certified and uncertified accommodations?

Based on these research questions, the hypotheses tested through this study are:

- 1) Null Hypothesis: There are no differences between certified and uncertified accommodations relative to visitation, sustainable practices used, and viewpoints of certification programs.
- 2) Alternate Hypothesis #1: Certified accommodations have seen a larger increase in visitation over the past decade when compared to changes in visitation observed at uncertified accommodations.
- 3) Alternate Hypothesis #2: Certified accommodations utilize more sustainability and conservation-driven practices, technology, and initiatives when compared to their uncertified counterparts.

- 4) Alternate Hypothesis #3: Certified accommodations will overall have a much more positive outlook of certification programs and will have much higher level of support for certification programs.

METHODS

Research Design

To address these research questions and create the opportunity to best understand the complex relationships involved in addressing the impacts of ecotourism certification programs and the differences that exist between certified and uncertified accommodations, this study utilizes a nested geographic scale mixed-methods approach. In simpler terms, this study involves the use of qualitative and quantitative research methods across geographic scales through conducting in-person semi-structured interviews and online surveys sent via e-mail. In this case, the geographic scales used are the national scale, which is represented through the online survey, and the local scale, which is assessed through semi-structured interviews. In both cases, the unit of study is the accommodation, with survey recipients and interviewees being accommodation management/owners. The online survey used can be found in Appendix A and the interview protocol can be found in Appendix B.

The names and locations of participating accommodations are not mentioned in this study in order to protect the identity of participants and respect their wish for privacy and anonymity. I can say though that while surveys were gathered from across the country and represented all seven provinces, as you will see in the next section, interviews took place in the provinces of Alajuela and San Jose, both inland provinces.

Online Survey Instrument

The online survey was developed and administered between August 2017 – April 2018. The survey was created using the software Qualtrics and was sent via e-mail to 400 Costa Rican accommodations, 200 certified accommodations and 200 uncertified accommodations. Included accommodations were selected randomly, but also depended on the availability of an e-mail address for selected accommodations. If a selected accommodation did not have an e-mail address publicly available, then that accommodation was replaced randomly with an accommodation that did have a publicly available e-mail address. This replacement continued until 200 accommodations with e-mail addresses were found for both certified and uncertified accommodations. While this represents a higher proportion of certified accommodations than uncertified accommodations, this method was chosen due to a large number of uncertified accommodations not having publicly available e-mail addresses. Beyond this reason, if I selected number of participants based on proportions, respondents would have been heavily skewed towards uncertified respondents. Lastly, while sending the survey to more accommodations may have resulted in a higher number of respondents, this would have likely significantly reduced the response rate.

The survey sought information from the respondent regarding how the accommodation and visitation has changed over the past decade, and asked about their personal perspective and opinions on CST. The ultimate goal from this survey was to determine if any differences in accommodation management, operation, visitation, and thoughts on certification existed between certified and uncertified accommodations.

Once survey topics were finalized, the final survey included 16 questions. The survey had a branched design, meaning that questions answered depended on the certification status of the accommodation. Certified accommodations answered a total of 13 questions and uncertified accommodations also answered 13 questions, but these questions were different and discussed different topics (Figure 4.1).

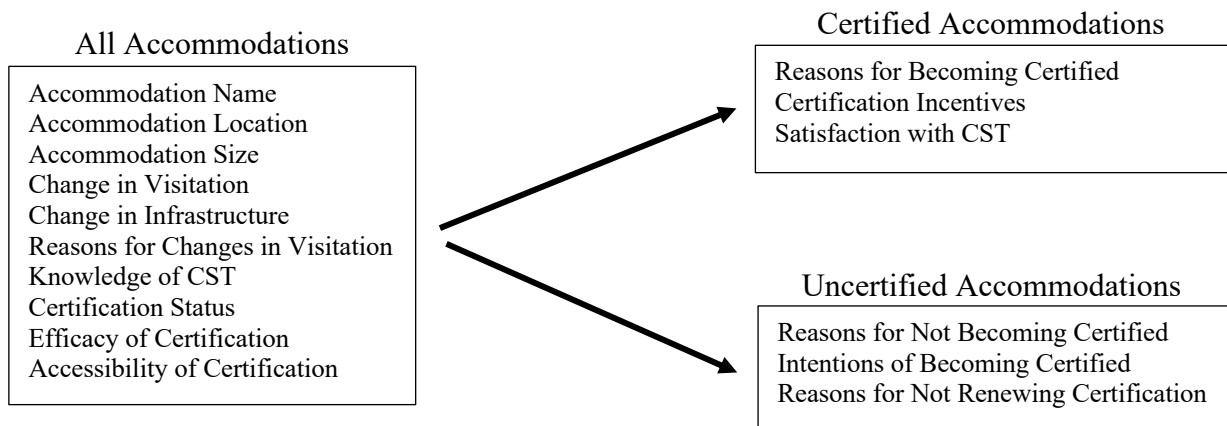


Figure 4.1. Online survey utilized a branched design with certified and uncertified accommodations answering different sets of questions. Survey contained 16 questions, with certified accommodations answering 13 questions and uncertified accommodations also answering 13 questions. Questions were either “check all that apply” or “select the best option”. Each question also contained the opportunity for an open-ended response if desired.

To decrease the time commitment of the survey in an effort to increase response rate, most questions were not open-ended but instead were either “check all that apply” or “select the best option”. Through this approach, each question offered pre-determined options for accommodations to select. If none of these options suited the respondent, all questions did include a space to give an alternate, open-ended response.

Online survey resulted in a response rate of 27%, with a total of 108 responses that were fully completed and utilized in analyses. Breaking this down further, survey

respondents consisted of 52 certified accommodations and 56 uncertified accommodations. In an effort to avoid a geographic bias, accommodation locations were investigated to ensure that all respondents were not heavily concentrated in one specific area, which may have resulted in skewed data towards one specific perspective on changes in tourism and certification. When mapped, accommodations represented all seven Costa Rican provinces (Table 4.1), and responses per province were relatively proportional to the total number of accommodations per province.

Table 4.1.

Respondents represented all seven Costa Rican provinces, suggesting no geographic bias in responses. Locations of 108 survey respondents were mapped to ensure that respondents represented a majority of Costa Rica and not any one tourist area or tourism type. Number of responses was also relatively proportional to total number of accommodations in each province, further suggesting no response bias.

Province	# of Responses (% of Total # of Accommodations in Province)
Alajuela	26 (5%)
Cartago	5 (6%)
Guanacaste	17 (3%)
Heredia	6 (6%)
Limon	9 (5%)
Puntarenas	34 (4%)
San Jose	11 (3%)

Semi-Structured Interviews

In-person semi-structured interviews were conducted with accommodation owners or management during the period March-June 2018. I focused primarily on five ecotourism-dependent communities in inland Costa Rica where accommodations are not only less prevalent but also where tourism exists in defined areas/communities. These

inland communities differ from coastal communities from a tourism perspective in that tourism communities in the interior of Costa Rica are often more isolated from each other and there is much more geographic space between inland communities. This suggests these inland communities will provide the best opportunity to study, understand, and potentially make direct conclusions regarding the impacts of ecotourism and certification on accommodations (this chapter) and communities (next chapter) since there is limited influence from other communities.

Assessing these five study communities, there are a total of 17 accommodations across all communities. All 17 accommodations were contacted for participation in semi-structured interviews and out of these accommodations, any that responded to the request for participation were interviewed. This resulted in the conduction of 13 semi-structured interviews. The breakdown of interviews by certification status was 5 interviews with certified accommodations, 5 with never-uncertified accommodations, and 3 with accommodations that were once certified but were no longer participating in the CST at the time of the interview. Considering that sample size was limited and interviews were reliant on the accommodation's response to interview requests, the resulting number of interviews and the representation of all possible certification statuses represents a relatively well-balanced study that provides information from a wide variety of perspectives.

These semi-structured interviews consisted of 20 questions with the topics covered found in Table 4.2.

Table 4.2.

Topics covered in semi-structured interviews with accommodation owners/management

at Costa Rican accommodations. Interviews were conducted with accommodations located in five communities, resulting in a total of 13 semi-structured interviews completed between March-June 2018. A total of 20 open-ended questions were asked to interviewees. All interviews were audio recorded and were then transcribed and translated from Spanish to English.

Accommodation History	Community Interactions
Hotel Capacity and Infrastructure	Conservation Initiatives
Employment Statistics	Certification Status and Program Thoughts
Accommodation Commodities	Changes in Visitation and Infrastructure
Sustainability and Sustainable Practices	Marketing Strategies

While I did ask all 20 questions in each interview, the semi-structured nature of the interview sometimes led to additional questions being asked and additional points of interest being discussed. This resulted in an opportunity to gain further data beyond what was encompassed by the original interview questions and allowed for a better understanding of accommodations and certification in Costa Rica.

I conducted all interviews. Each interview was audio recorded, with the permission of the interviewee, and I then transcribed and translated each interview based on these recordings from Spanish to English. Transcriptions were analyzed utilizing MAXQDA software. I conducted a thematic analysis through a grounded theory approach, meaning that while the researcher had developed hypotheses going into the study, data were not analyzed to specifically address these hypotheses or any existing theories. Data were instead analyzed freely with the intention of letting overarching

themes emerge independently of any preconceived ideas. This approach not only allowed for the opportunity to answer the set of research questions listed above, but also granted the opportunity for the data to provide further insight into certification and accommodations beyond what was encompassed through the initial set of research questions.

While interviews and qualitative data are often criticized for lack of validity and reliability, there are methods that exist that can aid in demonstrating the relevance and accuracy of qualitative data findings (McLellan et al. 2003). Of those, one of the most prominent is triangulation, a concept that utilizes multiple research methods to study the same phenomenon (Anderson, 2010). I utilized triangulation in this study through conducting the online surveys, which touched on some similar topics as those included in interviews. This allowed for interview data to be compared to a much larger dataset that encompassed a larger portion of the Costa Rican accommodation industry. With these two datasets and a comparison between them, I was able to verify resulting themes that resulted from the interview data analysis and ensure that findings are reliable and representative of the larger Costa Rican ecotourism accommodation industry.

Statistical Methods

While qualitative methods such as the semi-structured interviews do not involve statistical analyses, some of the collected online survey data were capable of being analyzed statistically. Survey data collected were primarily in the form of nominal and ratio data and ratio data were assessed using chi-square analyses with a post-hoc comparisons to allow for comparisons between groups. All nominal data collected were assessed and responses are presented in terms of percentages of total respondents. This

allows for the most common answers from respondents for nominal data questions to be reported and provides the best opportunity to address the research questions at hand.

RESULTS AND DISCUSSION

Knowledge of CST

Prior to discussing the impacts and opinions of the CST, one interesting finding from this study was that 11.1% (12/108 of total respondents and 12/56 of uncertified respondents) of survey respondents did not have any knowledge of the program and were not aware that it existed. This was surprising due to the fact that the CST is not only world-renowned in the ecotourism industry for being one of the preeminent certification programs in existence (Honey, 2002), but also because Costa Rica relies heavily on ecotourism for a major component of its economic development and prides itself on its nature- and conservation-oriented national culture (Koens et al. 2009). Both suggest that tourism operators within the Costa Rican ecotourism industry would be aware and knowledgeable of the different initiatives offered specifically to them.

Prior to conducting the survey, I believed that while there would definitely be outlier accommodations that were unaware of the certification program, these would be few and far between. However, with roughly 11% of accommodations not being knowledgeable of the CST, it is clear that there is a segmentation of accommodations that the CST has not been successful in reaching. Furthermore, with only roughly 9% of accommodations certified under the CST, this means that there is close to 90% of total accommodations in Costa Rica that are not certified. With this large portion of the market not certified under the CST, combined with the percentage that is unaware of its existence at all, these findings demonstrate that certification has yet to fully infiltrate the

ecotourism accommodation market (Weaver, 2009), especially when considering that the CST is one of the most popular certification programs in the world today (Molina-Murillo, 2019). This lack of adoption of certification across the accommodation industry will need to change in the coming years if the ecotourism industry truly wishes to adopt certification as an effective assessment tool.

Certification Incentives

In order to determine the specific incentives offered through the CST that attracted accommodation participation, certified accommodations that responded to the online survey were asked to select which of the offered incentives influenced their decision to apply for certification. This section primarily utilizes this survey data for analysis, but I also incorporate one of the themes found through interview analysis that helps support the claims made based on survey results.

Of the 108 survey respondents, 52 were certified accommodations. When asked what specific incentives offered under the CST were major reasons that the accommodation decided to apply for certification, the three most commonly selected survey answers were:

- Use of the CST logo on accommodation website and promotional materials (71.2%) (37/52);
- Desire to increase the sustainability of and reduce operation costs (55.8%) (29/52);
- Increase and gain respect and credibility within the ecotourism industry (42.3%) (22/52).

Beyond the most commonly selected answers, the two options that were selected least were:

- Access and discounts to ecotourism conferences, presentations, and conventions (13.5%) (7/52);
- Accommodation priority for local press and media coverage (9.6%) (5/52).

While all of these benefits are often cited in ecotourism certification literature as common reasons accommodations choose to participate in certification programs (Lebe and Zupan, 2012; Ayuso, 2007), these results demonstrate that for CST participants, the most appealing incentives are those that would theoretically help directly distinguish them from their competitors and help find more sustainable strategies that could be implemented in their operating scheme.

Since certification is often argued as a way to increase visitation (Esparon et al. 2014), it is not surprising that the most commonly cited incentive for participation was the use of the CST logo on accommodation marketing materials. While certification's impacts on visitation have not been adequately addressed previously, it is argued that eco-conscious tourists, tour operators, and travel agents will actively seek out certified businesses, suggesting that visitation may increase as a result of better attracting this niche market group (Fairweather et al. 2005). This idea is complimentary with the belief that certification will lead to an increase in respect for the certified accommodation in the larger ecotourism industry. With an increase in credibility, one can argue that this may also aid in attracting tourists that would have otherwise chosen a different accommodation for their stay (Bergin-Seers and Mair, 2009).

Furthermore, beyond the use of the CST logo and an increase in respect amongst peers in the industry, many respondents selected that certification reduces operation costs. Expanding on this, the process of applying for certification under the CST allows for an accommodation to assess operations and technology and discover ways that costs can be reduced, particularly in the form of energy and waste reduction and water conservation (CST, 2018). With this adoption of these new technologies, the accommodation not only reduces operation costs and increases their sustainable practices, but also will obtain certification as a byproduct. Stated differently, these findings suggest that for many certified accommodations, one of the most compelling reasons to go through the application process was to not necessarily obtain certification, but to instead discover alternative ways to operate in an effort to reduce costs. While other methods besides certification could be used to disseminate accommodation best practices and sustainable technology, such as creating a government rebate program for accommodations that utilize certain technologies, the use of certification programs is preferred because this means that the cost of adopting these strategies falls entirely on the accommodations (and not on the government). Beyond this, the use of certification programs means that this specific incentive can be combined with other incentives (e.g. using the CST logo) in hopes of attracting more participants and better penetrating the accommodation industry.

Examining the least popular certification incentives selected in the online survey, it was interesting that both revolved around the representation of the accommodation in other methods besides the direct use of the CST logo. With access and discounts to ecotourism events, while a large reason for these events is to share best practices, it is

also intended to act as a method for certified accommodations to build a network with each other (Rome, 2005). As only 13.5% (7/52) of certified respondents selected this incentive as a driving factor in their decision to apply, it suggests that creating a network between certified properties that could lead to a potentially mutualistic relationship between them is not a reason that drives accommodations to become certified.

Utilizing interview data to further support these survey findings, while interviews demonstrated that accommodations do look out for one another and support each other, this sense of comradery and community was explained as largely based on geography and not on certification status. One example was an interviewee stating **“since we are a small community, we know the owners of the other accommodations and while we are of course in competition with each other, we help each other and force each other to be better. When my hotel is completely booked, or vice versa, we send the tourists to the other hotels in the area because we ultimately want them staying in the community rather than staying somewhere else all together” (C1 – Certified Accommodation #1)**. This theme of accommodations supporting each other was seen across interviews. When discussed, this theme was always explained through the lens of the community and supporting those accommodations that were geographically close by, regardless of certification status. No interviewee discussed any form of existing relationships between certified accommodations outside of the immediate community and no interviewee representing a certified accommodation mentioned any desire to form a close-working relationship with other certified accommodations across the country.

Barriers to Certification

In addition to assessing the incentives that led to many certified accommodations becoming certified, an important component of the overall story is also assessing some of the reasons that uncertified accommodations have chosen to not go through the certification process. These barriers to certification were explored both in online surveys and in semi-structured interviews and data from both sources is presented here.

Beginning with an analysis of survey data, of the 108 survey respondents, 56 were uncertified accommodations. Assessing survey respondent data from the perspective of the uncertified accommodations, the two most commonly selected reasons for not participating in the CST were:

- No time to complete the application process (51.8%) (29/56)
- Incentives offered through the CST are not enticing enough to warrant participation (41.1%) (23/56)

Beginning with the common belief amongst uncertified accommodations that the certification application process is time intensive, this belief is intimately tied to the length of the certification process and the amount of documentation and record-keeping necessary to successfully complete the certification application. The CST application process requires the submission of records ranging from water usage to energy consumption to money donated to conservation and community development initiatives (CST, 2018). Beyond these records, any type of data concerning the operation of the hotel, such as water usage and energy consumption, must be divided and reported by room, not by the hotel as a whole, a process in and of itself that takes a great deal of time and effort.

While this was the most common reason given from uncertified survey respondents for not participating in the CST, this theme of the CST being too time intensive to warrant participation was also apparent in conducted interviews. Two example quotes relating to this theme come from interviews with uncertified accommodation owners:

“I own and operate a relatively small lodge with 15 rooms and am the sole person responsible for our accounts and management and ensuring the bills are paid. This situation is not uncommon in Costa Rica. Because of this, I am more concerned with making sure our accommodation stays operational and remains open rather than trying to keep track of all the documentation and records necessary to apply for certification” (U1 – Uncertified Accommodation #1)

“at this point in time, we are not capable of keeping track of all the necessary documentation to be considered for certification” (U3 – Uncertified Accommodation #3)

Beyond the certification process being time consuming, one alternative, yet related, theme that resulted from interviews and the open-ended section of the survey was that certification was “expensive”. Looking at the data, six of eight uncertified accommodations interviewed mentioned the cost of the CST prohibiting them from participating. Further supporting this claim, of the 56 uncertified survey respondents, 37.5% (21/56) chose to fill out the optional open-ended portion of this particular question and specifically referenced this same theme. Looking specifically at the open-ended portion of this survey question, 72.4% (21/29) of uncertified accommodations that completed this optional portion mentioned the cost of participation. This is particularly

insightful when considering that survey respondents willingly chose to fill out this optional portion and felt the need to include this as a reason for not participating in certification beyond those included as pre-determined options on the survey.

Further explaining this theme of certification being “expensive”, while the CST is acclaimed for not having an application or certification fee associated with the program (Honey, 2002; Molina-Murillo, 2019), interviewed accommodations discussed that in order to successfully achieve certification, an accommodation needs to essentially hire an employee to keep track of all necessary documentation for the certification application. Since most accommodations in Costa Rica are smaller accommodations that are often family-owned and operated, it was a common explanation seen in interview data that accommodations just simply could not afford to apply for certification, regardless of their being no certification fee. This is exemplified through an uncertified accommodation owner saying **“the CST is designed for people that can pay to keep track of all the necessary documents and hire someone to go through the certification process. As a small lodge, I cannot afford to hire someone to handle this” (U4 – Uncertified Accommodation #4).**

Continuing with this theme of certification being “expensive”, it became very apparent when analyzing interview data that there is a divide between accommodations in Costa Rica when it comes to certification and the accommodations certified under the CST. This divide is related to accommodation size and price. Many interviewees, when asked about certification, said that certification was meant and only achievable for accommodations that were large in size and/or were more expensive. Going further, some interviewees expressed concern that the certification process as it exists is inhibiting

smaller accommodations from applying and achieving certification. Looking at interviews that represent this dichotomy, some quotes from both certified and uncertified accommodations are:

“I believe that certification works best for larger hotels that can have a person whose job is solely to collect and maintain all documentation necessary for certification” (C3 – Certified Accommodation #3)

“small lodges are at a disadvantage because we do not have the funds to pay someone to apply for certification. And the rich lodges do and brag about it” (U6 – Uncertified Accommodation #6)

“you will see, that the ones that are certified under the CST are the big chained hotels or those that are very expensive. Those that can afford to hire someone to keep track of the information internally” (U2 – Uncertified Accommodation #2)

This idea that there is a clear divide between certified and uncertified accommodations is concerning in that most accommodations in Costa Rica are smaller hotels and if this large segment of the industry believes that certification is not meant for them, this is an operational issue of the CST that needs to be addressed. In order to explore this idea further and see if the data could support these claims, I completed an additional chi-square analysis utilizing those accommodations that either responded to the survey or were interviewed (Table 4.3). This resulted in a total of 57 certified accommodations and 64 uncertified accommodations being used in this particular analysis. The goal of these analyses was to see if there was a difference in both accommodation size and accommodation cost per night between certified and uncertified accommodations that participated in this study.

Table 4.3.

Certified accommodations are significantly larger and more expensive when compared to uncertified accommodations. Survey respondents and interview participants were separated into certified (n = 57) and uncertified groups (n = 64) and compared via chi-square analysis to determine if any significant differences existed between size and cost. Analyses show that there were significant differences between groups both in terms of accommodation size (p = 0.041) and price per night (p = 0.038). Cost per night was determined for each accommodation by recording the price of a standard room during peak tourism season.

	Certified Accommodations	Uncertified Accommodations
Average Size (# of rooms)	31 ^a	17 ^a
Average Cost per Night (US\$)	\$181 ^b	\$104 ^b

Results suggest that certified accommodations have an average of 14 more rooms than their uncertified counterparts (p = 0.041) and cost roughly US\$77 more per night (p = 0.038), an increase in price of 74% when compared to the average price of an uncertified accommodation (Table 4.3). If you take this one step further and examine the changes in revenue that these differences may cause between certified and uncertified accommodations, assuming a hotel represents the averages, you see an even larger discrepancy with certified accommodations earning roughly US\$5,600 and uncertified accommodations earning roughly US\$1,750 in one night (assuming that each hotel is at full capacity).

Based on the resulting chi-square analyses, these findings demonstrate that differences in size and price per night do exist between certified and uncertified

accommodations, with larger and/or more expensive hotels more likely to participate in certification. This helps to demonstrate that the perceived divide between certified and uncertified accommodations does exist and should be addressed in order to make the CST more accessible to all.

Community Relations

One aspect of accommodations addressed in conducted interviews, but not in online surveys, was their relation to the local community. This section relies solely on interview data to discuss the viewpoints of certified and uncertified accommodations in regards to their relationship with the surrounding local community.

Since a goal of ecotourism is to empower locals and aid in community development (Jaafar and Maideen, 2012; Alonso and Ogle, 2010), it was vital to include questions that addressed topics such as local employment and any programs either operated or directly supported by the accommodation that relate to the socioeconomic and cultural development/preservation of a community (Tsaour, 2006). In addition, a goal of including these questions was to identify any differences that exist between certified and uncertified accommodations and determine if certified accommodations really do better represent the principles of ecotourism when compared to uncertified accommodations. Once interviews were completed and analyzed, it was clear accommodations, regardless of certification status, were dedicated to employing local community members as well as doing what they were capable of in terms of supporting any other social or economic initiatives present within the community.

Looking at local employment first, something considered to be highly important within the ecotourism industry (Kasim, 2004), every accommodation interviewed was

very clear that a majority of accommodation staff were from the local community and that it was a priority for them to employ local people. Interviewees made comments such as:

“everyone besides me” (C2 – Certified Accommodation #2)

“90% are from and live within the local community” (U5 – Uncertified Accommodation #5)

“all employees come from within a 10 kilometer radius of the hotel” (U7 – Uncertified Accommodation #7)

With every accommodation interviewed stressing the importance of local employment and actively employing community members, this suggests that in terms of local employment, certification status does not impact an accommodation’s ability to contribute to the employment of local people. While larger accommodations can employ more people, and it cannot be forgotten that certified accommodations are often larger (Table 4.3), this cannot and should not diminish the commitment that smaller, uncertified accommodations have to supporting the local economy and ensuring that money stays within the community by always attempting to employ local community members.

Beyond employment of local people and certification status, all accommodations interviewed strived to be involved in their communities and ensure that they were contributing to the positive development of their communities in ways achievable to them. One quote from an accommodation owner that encompasses this theme of establishing a working relationship between the accommodations and the community is:

“I view the hotel and the community as siblings. They are intimately connected to each other and must support each other” (C5 – Certified Accommodation #5). Many

accommodations interviewed (four of five certified, and six of eight uncertified), regardless of certification status, explicitly discussed their reliance on the local community and expressed a mutual respect that existed between the accommodation and community members.

While all accommodations strived to support the community, some accommodations, particularly those that were certified, were doing more in terms of contributing to the socioeconomic development and cultural preservation of the community overall. Examining interviews to find some of the ways in which certified accommodations supported their communities in ways that uncertified accommodations didn't, four certified accommodations (out of five interviewed) and two uncertified accommodations (out of eight interviewed) created after school programs for local students or created educational programs for community members. A different certified accommodation interviewed discussed their work developing the community by aiding in either renovating community infrastructure or helping build new and shared spaces that could be used for communal use. There were no uncertified accommodations interviewed that discussed infrastructure other than their own privately owned property.

Lastly, while cultural preservation was discussed less in interviews, three certified accommodations (out of five) mentioned that they provide tourists with the opportunity to participate in making local crafts or for visitors to volunteer alongside locals, an additional community relations initiative that was not discussed by any uncertified accommodations interviewed. Since certified accommodations are often larger in size and more expensive, I also examined if accommodation size and price was related to the type of community development supported by the accommodation. It was found that the larger

hotels tended to be those that participated in more community initiatives. These just also happened to be those that were certified considering the correlation between size and certification.

If these contributions to community development weren't an option considering some interviewed accommodations were very small in size with limited capability and resources, all accommodations stated that they supported other local businesses by advertising local restaurants, buying all supplies locally, or by supporting local vendors and including their products within the accommodation that tourists could then buy. This theme of contributing to the local economy and supporting local businesses was mentioned by eleven of thirteen interviewees representing both certified and uncertified accommodations. Some examples from interviews supporting this theme are interviewee C4 (Certified Accommodation #4) stating that **“the money we receive usually returns to the community in some form”** and interviewee U6 (Uncertified Accommodation #6) mentioning **“we try our best to buy all of our supplies and any labor from the local community. All food supplies come from local vendors and when something needs to be repaired or upgraded at the hotel, we hire people in the local community first”**. This mindset of ensuring that revenue made by the accommodation stays within the local community to the fullest extent possible is common across accommodations, regardless of certification status.

Conservation and Sustainability

Similar to community relations, an important component of ecotourism is the contribution of ecotourism operators to conservation and sustainability (Bookbinder et al. 1998). These topics were discussed through semi-structured interviews but not in online

surveys, so all data presented here are interview data. As with community relations, while interviews were meant to determine ways in which accommodations contribute to conservation and sustainability, an additional topic of interest was seeing if certified and uncertified accommodations approach these concepts differently and if these differences exist between principles, practice, or both.

All thirteen accommodations interviewed were committed to contributing to conservation and sustainability. Since interviews were semi-structured and questions were designed to let the respondent answer in whichever way they saw appropriate, one interesting result was the interpretation of the terms “sustainability” and “conservation”. The term “sustainability” was often approached by interviewees as the commitment of the accommodation to reducing energy and water consumption and the utilization of alternative energy sources, such as solar energy. On the other hand, “conservation” entirely revolved around the environment and the protection of the natural resources and biodiversity the accommodation depended on.

Examining the common viewpoints of sustainability, while all interviewees defined the term in regards to operational procedures of the accommodation itself, there was little convergence as to what types of sustainable technologies and practices were being used. Some focused more on water conservation and recycling (3/5 certified interviewees and 2/8 uncertified interviewees), with uncertified accommodations focusing solely on reducing water usage rather than on the implementation of water recycling strategies. Others chose to focus on energy consumption and the strategies being used to either reduce energy usage or implementing green energy alternatives (5/5 certified interviewees and 5/8 uncertified interviewees). Other interviewees even chose to

discuss sustainability through the lens of waste reduction, both from the accommodation itself and the tourists that stayed there (3/5 certified interviewees and 1/8 uncertified interviewees). Analyzing potential overarching themes representing sustainability, the only potential theme that emerged was that nine of thirteen interviewees (4/5 certified and 5/8 uncertified) specifically mentioned their implementation of solar panels and their increasing usage of solar energy. Other types of renewable energy were discussed, but this was by far the most common.

While all accommodations were actively contributing to sustainability, similar to what was found in regards to community relations, certified accommodations tended to utilize a wider range of sustainable technology and operating procedures when compared to uncertified accommodations. Some examples of additional sustainable practices utilized by certified accommodations were:

- the use of water recycling technology (3/5 certified accommodations),
- the use of hydropower (2/5 certified accommodations),
- and the availability of information to guests on sustainable practices utilized by the accommodation and ways in which guests can reduce their own ecological footprint (4/5 certified accommodations).

None of the interviewed uncertified accommodations discussed using any of these additional sustainable practices.

The most common sustainable practices mentioned from uncertified accommodations were:

- solar energy (5/8 uncertified accommodations) (4/5 certified accommodations)

- recycling programs (4/8 uncertified accommodations) (5/5 certified accommodations)

While these were common practices utilized by uncertified accommodations, it is also clear that these practices were also utilized by certified accommodations. These findings suggest that while all accommodations are acting sustainably to some extent, certified accommodations are implementing further strategies to best achieve sustainability in their business.

Continuing with sustainability, sixteen of eighteen accommodations interviewed understood and spoke towards the importance of operating sustainably, regardless of certification status. One interviewee stated that **“at least 90% of what is in the CST, you don’t do it to get certification, you do it because it is common sense” (C1 – Certified Accommodation #1)**. While this quote is from a certified accommodation, I chose this quote to represent this theme of accommodations actively contributing to sustainability efforts because the idea of sustainability being “common sense” or “you do it because it is the right thing to do” was observed in interviews with both certified (5/5 interviewees) and uncertified accommodations (6/8 interviewees). This suggests that sustainability is not just important to certified accommodations, but to all accommodations. Furthermore, this finding suggests that while certification may successfully identify accommodations that are doing the most in regards to sustainability, certification itself may not be a driving reason that accommodations are acting sustainably or aiming to become more sustainable. There is a clear commitment to sustainability observed across the accommodation industry in Costa Rica, and interview data suggests that these actions are not done with the intention of certification, but are

instead practiced due to the overall eco-friendly mindset and national identity that Costa Rica has become known for globally.

Moving to an analysis of the importance of conservation to accommodations and the ways in which conservation was supported, it was very clear across interviews, that both certified and uncertified accommodations understood their reliance on nature. Beyond this reliance, it was also understood that nature's protection was vital to the continuity of their business and attracting tourists to the destination. Interviewees stated that **“we are a very ecological destination. We depend on tourists that want to see nature, so without nature, there would be no tourism”** (U8 – Uncertified Accommodation #8) or **“since our business relies on the natural environment, it is very important to us to help conserve it”** (C3 – Certified Accommodation #3). This theme of their reliance on nature was observed in ten of the thirteen interviews, with each of these accommodations being cognizant and openly discussing the intimate relationship that exists between the success of their accommodation and the protection of the ecosystem around them.

Beyond being aware of the importance of conservation from a business standpoint, an additional theme that came across through analyses was that accommodations saw conservation as not only necessary but as their responsibility as ecotourism operators. One quote that touches on this theme is: **“we participate in conservation, because it is our responsibility. We live in an area surrounded by untouched nature and it is our responsibility to help protect it”** (C4 – Certified Accommodation #4). This viewpoint regarding the protection of nature and the importance of actively contributing to its protection, was seen in all thirteen interviews,

not just those that were with certified accommodations. This suggests that accommodations are contributing positively to the conservation and protection of the natural areas around them, regardless of certification status.

Looking specifically at differences in contributions to conservation between certified and uncertified accommodations, the difference once again comes down to practice and not principle. Four of five certified accommodations interviewed discussed monetary contributions to conservation initiatives in the area. One example was a certified accommodation owner who stated: **“We work in conjunction with the national park and provide funds that help keep that park funded and capable of providing educational opportunities to its visitors” (C2 – Certified Accommodation #2)**. Only two of the eight uncertified accommodations interviews acknowledged that they actively donated any money to conservation initiatives when asked. Furthermore, three of the five certified accommodations interviews discussed setting up their own initiatives that came in the form of conservation education programs, both for tourists and community members, or volunteer programs that allowed visitors to participate in conservation initiatives. Uncertified accommodations often did not have the capability of creating such programs, and as a result, none of the uncertified accommodations interviewed had their own conservation initiatives.

Through these analyses, while there is no clear distinction between certified and uncertified accommodations in terms of a deep commitment to conservation and sustainability, there is a large difference between groups in regards to the practices and programs utilized to help conserve and protect the natural world. Certified accommodations often implemented more sustainable technology into their everyday

operating procedures when compared to uncertified accommodations, and also more directly contributed to conservation initiatives in their communities when compared to the uncertified accommodations located within the same communities.

Changes in Visitation

Proponents of certification often argue that one of the biggest benefits of certification is in attracting tourists to destinations and accommodations (Esparon et al. 2014). Regarding visitation, survey respondents were asked to not only quantify how visitation has changed over the past decade, but also what some potential reasons are that they think may have contributed to these changes. One of the available options was certification. These topics were further discussed in interviews with questions about visitation and the relationship, if any, that exists between visitation and certification status.

Looking at survey data, in an effort to reduce time spent on the survey and increase survey response rates, respondents were simply asked how visitation has changed over the past decade, and were then given options to choose from representing increases, decreases, or no observed changes in visitation. Respondents were asked to select the single best option that represented any observed changes in visitation to their accommodation specifically.

A chi-square analysis performed on the collected data compared changes in visitation between certified and uncertified survey respondents to determine if a difference does exist in changes in visitation patterns of certified and uncertified accommodations over the past decade (Table 4.4).

Table 4.4.

Based on reported changes in visitation over the past decade, certified and uncertified accommodations are significantly different from each other and observed varying levels of change. A chi-square test was performed after survey respondent data was separated into certified (n = 52) and uncertified categories (n = 56). Findings suggest a significant difference between groups (p = 0.034), with most of the difference between groups being seen in the amount of accommodations that observed a decrease in visitation.

	Increased 51%+	Increased 1-50%	No Change	Decreased 1-50%	Decreased 51%+
Certified^a	18	21	3	10	0
Uncertified^a	21	25	3	0	7

The results, while significant, are hard to interpret in that it appears that most of the difference between groups largely lies in those that have had a decrease in visitation over the past decade. Similar numbers of accommodations across groups saw either an increase in visitation or did not see any change, but while some certified accommodations saw a decrease of up to 50%, none reported a decrease of more than 50%. In complete contrast, no uncertified accommodations saw a decrease of less than 50%, but several reported decreases of more than 50%. This stark difference in accommodations that saw a decrease in visitation across groups is the main factor contributing to the significant p-value. One noteworthy finding is that while uncertified accommodations saw a larger decrease in visitation, a higher number of certified accommodations overall saw a decrease in visitation, with 10 certified accommodations reporting a decrease compared to 7 uncertified accommodations.

Examining these decreases further, no respondents (certified and uncertified) that reported a decrease in visitation selected certification as a reason for this change. Looking solely at respondents that reported a decrease in visitation (n = 17), the most common reasons selected as to what contributed to these decreases were:

- Cost of travel to destination has increased (76.5%) (13/17)
- Increase in competition as more accommodations open (64.7%) (11/17)

All other potential reasons for changes in visitation that were given as options were selected less than 30% of the time. This suggests that from the eyes of these accommodations that witnessed a decrease in visitation, there is no perception that certification contributed to these decreases, regardless of certification status. Rather though, increases in the prices of travel to the destination and an increase in competition, both a consequence of an increase in tourist demand, are the main reasons given by accommodations that experienced decreases in visitation. Beyond the lack of evidence from the eyes of the accommodation that certification impacts visitation, while data suggests that uncertified accommodations may have experienced greater decreases than certified accommodations, when the data is compiled differently (Table 4.5), there is no observed difference between groups ($p = 0.686$).

Table 4.5.

When data is compiled more generally, significant differences between groups disappear, suggesting that certification has little impact on accommodation visitation.

Survey respondent data was compiled into general groups representing less variation to examine impacts of certification status on visitation. Chi-square analysis did not find a significant difference between groups ($p = 0.686$) with similar numbers of certified and uncertified accommodations seeing increases, decreases, or no change in visitation.

	Increased	No Change	Decreased
Certified	39	3	10
Uncertified	46	3	7

In fact, observed changes in visitation are relatively equal between groups, with similar numbers of accommodations seeing an increase as well as a decrease in visitation. Based on these results, this study cannot provide proof to the common claim that certification benefits accommodations by increasing visitation.

Examining survey respondent data further, particularly for those respondents that reported either an increase in visitation or no change ($n = 91$), the most common reasons given for these observed changes were:

- Popularity of nature and ecotourism has increased globally (63.7%) (58/91)
- Tourism to Costa Rica has increased overall (57.1%) (52/91)
- Advertising/Ranking on external travel sites (e.g. TripAdvisor) (46.2%) (42/91)

One of the least selected reasons for changes in visitation was the CST, with only 13.2% (12/91) of respondents selecting certification as contributing to observed visitation changes. This finding is supported through the conducted interviews in that when asked if certification was pursued for the purpose of increasing visitation, all five certified

accommodations interviewed denied any claim that certification altered their visitation and made it very clear that certification was not pursued with the sole intention of increasing visitation.

Based on survey results, it is apparent that accommodations view the increase of popularity of nature and ecotourism and Costa Rica itself as a destination for being the driving factors impacting visitation. And for those accommodations that reported a decrease, the reasons selected for these observed changes are directly tied to these exact same claims of an increase in demand, because as demand increases, competition and price in the market will also increase.

Beyond this, while not fully explored in this study, interviews with accommodations made it apparent of the importance of travel sites and the potentially significant role they play in attracting tourists through the eyes of accommodations. This theme is supported by eleven of thirteen interviewed accommodations mentioning some travel site or social media platform being instrumental in their marketing strategies. This concept of travel sites and social media and the role they play in a tourists' decision-making process is one finding that should be further explored as our society becomes increasingly reliant on technology and available online information to make decisions.

Lastly, certification overall was not seen as a reason for changes in visitation, with only 11.1% (12/108) survey respondents selecting it as a factor in visitation changes. All twelve survey respondents that attributed visitation changes to certification were all certified accommodations. At no point did an uncertified accommodation, in surveys or interviews, express that a lack of certification was hindering their ability to attract tourists. Based on these results, while the study is small in scope, this study does not

support the claim that certification aids in increasing visitation rates to accommodations. While certification does not negatively impact visitation, since a comparable number of uncertified accommodations also reported visitation decreases, certification does not provide the benefit that so many proponents of certification argue it does.

CONCLUSIONS

Based on the results presented here, it is difficult to argue that certified accommodations, at least those in Costa Rica, are better representing the principles of ecotourism than their uncertified counterparts. All accommodations included in this study were contributing, in the ways that they were capable, to community development and conservation, the major tenets of ecotourism.

With that said, it cannot be ignored that certified accommodations tend to contribute more and utilize additional practices and initiatives when it comes to helping differentiate ecotourism from other tourism types. Certified accommodations tended to better support the socioeconomic development of their local communities through the creation of their own initiatives that focused on education and improving community infrastructure. This level of commitment was not observed from uncertified accommodations included in this study. Furthermore, in terms of conservation and sustainability, while all accommodations were completely dedicated to preserving the environment and operating in a sustainable manner, certified accommodations were found to contribute to the preservation of land and the protection of native biodiversity in more ways than uncertified accommodations. Of course, while this can potentially be linked to certification, it must also be acknowledged that certified accommodations were

also larger in size and more expensive. This suggests that certified accommodations have an overall greater capacity to contribute to such initiatives

While certified accommodations under the CST may be the “best” ecotourism accommodations in Costa Rica, this study finds that often times certified accommodations are those that have the privilege and the resources available to them to actually participate in certification and are more capable of devoting additional resources to other goals such as community development and conservation. There is a clear and distinct difference between certified and uncertified accommodations that cannot be ignored when it comes to accommodation size and cost, and because of this barrier, we cannot diminish the dedication that uncertified accommodations have to the principles of ecotourism and fulfilling them to the best of their ability. This existing barrier needs to be addressed, especially when considering that the CST is often referred to as the preminent certification program in the world, and revisions to the program need to be made that better allow for all accommodations to participate if they so choose.

Beyond this, one of the main incentives of certification selected by respondents in the online survey was the use of the CST logo on promotional materials. While this can be done for several reasons, including to gain respect from others within the ecotourism industry, one of the predominant reasons is to distinguish the accommodation from its competitors in hopes of better attracting tourists and increasing visitation in the process. This study explores the potential impacts that certification has on visitation rates, and results indicate that certification has little impact on visitation.

Continuing with certification’s impacts on visitation, not only do the data suggest that certification has no impact on visitation, the accommodations themselves do not

attribute observed changes in visitation to certification. With these findings, this study does not support claims presented in the literature that certification aids in increasing visitation to those that are certified. If certification globally does not impact visitation as was found in this particular study, then revisions within the certification industry need to be made that account for this. If increases in visitation is truly one of the main incentives and the industry chooses to continue utilizing this incentive, then work needs to be done to better market certification programs and certified accommodations around the world to make this incentive a reality. As it exists now, the certification industry is too convoluted for certification to have a significant impact on visitation rates. An alternative approach would be for the certification industry, and those who argue for it, to revise their ideas of what certification provides to those certified and build incentives that are actually attainable. Beyond revising certification incentives overall, something more specific to Costa Rica that should be further explored is the reasons behind why accommodations place so much value on utilizing the CST logo if it is not believed to lead to any competitive advantage over their uncertified counterparts.

Referring back to the originally stated research questions and hypotheses, the null hypothesis is rejected in that differences do exist between certified and uncertified accommodations. While all accommodations seem to uphold the principles of ecotourism, those that are certified tend to be better equipped to put those principles into practice. The first alternative hypothesis which states that certified accommodations have observed larger increases in visitation when compared to uncertified accommodations is also rejected. Examining the data, in terms of visitation increases, both certified and

uncertified accommodations saw increases in visitation over the study period, leading to no significant differences.

The second alternative hypothesis which discusses the differences between certified and uncertified accommodations in terms of conservation and sustainability is supported. While all accommodations successfully demonstrate a commitment to the principles of conservation and sustainability, there is ultimately a difference in practice, with those that are certified tending to offer and contribute to a wider array of conservation initiatives and programs and utilizing more sustainable technology. This is almost certainly because they are larger businesses with more resources. In other words, certification is not driving these differences – larger businesses have both the resources to get certified and to contribute to pro-community, pro-environment goals. Lastly, the third alternative hypothesis is also supported. Interviews very clearly demonstrated a difference in viewpoint of the CST between certified and uncertified accommodations, with uncertified accommodations often expressing their lack of trust for the CST. The survey further supported this hypothesis by finding that a large majority of certified accommodations are satisfied with the CST overall and think that it is effective in its mission.

Future studies can be done that further explore the roles and impacts of certification on accommodations. While one potential study can be done in Costa Rica and follow up on the differences and results found here, a possibly more impactful contribution would be replicating this study in destinations that are not Costa Rica and exploring the impacts that other certification programs have on accommodations. This can lead to a comparison between programs that will provide a much broader view of the

perceptions and impacts of certification from the eyes of accommodations, an integral part in the ecotourism worldwide and can lead to a much more compelling argument for the need of a revision of ecotourism certification programs globally.

CHAPTER 5

ECOTOURISM ACCOMMODATIONS, CERTIFICATION PROGRAMS, AND LOCAL COMMUNITIES

INTRODUCTION

As ecotourism has continued to grow and become more popular globally, it has increasingly been heralded as a mechanism for promoting socioeconomic development without harming the natural environment or the local cultural customs at destinations (Garrod, 2003). While the emergence of ecotourism has led to successful socioeconomic and environmental outcomes in communities around the world (Amati, 2013), research suggests that ecotourism can only be successful when it involves local participation and incorporates the majority of stakeholder groups in the decision-making process (Mitchell and Ashley, 2010). Beyond requiring local support for success, ecotourism initiatives can potentially face challenges in balancing conservation and the promotion of human welfare through socioeconomic development, sometimes focusing on one more than the other (Mylan, 2018).

With the ecotourism industry showing continued and sustained growth over the past several decades, the industry has adopted the use of ecotourism certification programs to better identify ecotourism operators that are successfully promoting community development while conserving the natural environment. In addition, certification programs are also utilized to reduce the amount of greenwashing in the industry (Spenceley, 2018). While research suggests that certification can offer benefits to certified operators, such as increased business, there is no clear conclusion in regards

to the efficacy of certification in providing benefits to operators or to the local communities that are dependent on ecotourism (Spenceley and Bien, 2013).

This study aims to address several research gaps in the literature pertaining to the local impacts of ecotourism and ecotourism certification. While ecotourism has been studied extensively, few studies have empirically assessed the socioeconomic impacts of ecotourism on local communities (Gartner and Cukier, 2011). Furthermore, to my knowledge, no studies have examined the impacts that ecotourism certification itself, not ecotourism in general, may specifically have in local communities. Since ecotourism's goals focus primarily on this local level, and certification programs are becoming more popular across the ecotourism industry, it is vital that these impacts are explored and better understood.

In order to address these research gaps, I conducted household livelihood surveys in three Costa Rican communities where ecotourism is present. The goal of this study is to better understand how ecotourism has impacted the socioeconomic dynamics within communities, how ecotourism contributes (or doesn't contribute) to the economic development of all community households, and how community members view ecotourism and ecotourism accommodations in their communities. A further goal is to examine how certification impacts these same topics by comparing certified accommodations to uncertified accommodations.

Communities and Community Development

The goal of community development is to create new opportunities for local residents that enhance human well-being and welfare and provide an opportunity to increase the quality of life for all in the community (Roseland, 2000). While development

can take multiple forms and is case-specific in that a strategy must be individually-crafted for each community, one very popular development strategy that has been adopted worldwide, especially in developing countries, has been the adoption of ecotourism (Kiss, 2004). Ecotourism is now observed in the development strategies of roughly 86% of developing nations globally and has become a worldwide phenomenon as developing nations begin to better understand the value that their natural areas can bring as well as tourists increasingly wanting to experience natural and relatively pristine environments (Lonn et al. 2018). The concept of ecotourism and how it contributes to community development is explored further through this chapter.

The term “community” is a rather ambiguous term, but is usually defined as a group of individuals having a common interest (Shaffer et al. 2006). The idea of physical space, however, can also play a critical role in the definition of a community. Physical space can be a core component of defining a community, such as political boundaries leading to the establishment of a municipality or state, or space may not be considered at all, with one example being a group of individuals belonging to some online group that all share a common interest but with no geographic focus (Roseland and Spiliotopoulou, 2017).

For this study, the term community utilizes the concept of space and defines community as a group of individuals that not only share common interests, but share the same geographic space that often has clear boundaries, share a similar set of resources, and has the political ability to implement and enforce decisions for that group of individuals (Scherl, 2005). This community is usually referred to as a village, municipality, or city. These communities can be separated into even smaller groups based

on factors including but not limited to age, gender, ethnicity, education, and levels of wealth, demonstrating the complexity that exists even within a small community (March and Wilkinson, 2009). While this study does not fully explore these differences, I acknowledge the existence of each subgroup and explore how each of these subgroups either benefits or is harmed by the existence of an ecotourism-based community development plan.

The ideas of economic development and community development have evolved over time and while each used to be considered separately, they are now widely viewed as complimentary and necessary if sustainable development is the ultimate goal (Audirac, 1997). Community economic development is multi-faceted and in order to be successful, those creating these development plans require several approaches and strategies holistically assess the different characteristics of a community and develop a comprehensive development plan at the community level. Regardless of the economic plan developed, it is imperative that community participation is as inclusive as possible to allow community members the opportunity to provide input during the decision-making process (Lovan et al. 2004).

While community economic development does not necessarily mean that all members directly participate in the created development plan, successful planning does require that most community members support the created plan and are given the chance to participate if desired (Reed et al. 2009). Beyond participation from a support aspect, it is also argued that community members have a better understanding of what would work and what would not work under local conditions. This alone suggests that community involvement in all stages of community development is necessary for success.

Ecotourism and Local Communities

The term ecotourism first appeared in the literature in the late 1980s as a result of the world's increasing focus on sustainable and environmental practices (Gumede and Nzama, 2019). As the ecotourism industry grew and gained traction globally, ecotourism began to represent more than environmental sustainability and evolved into a sustainable development strategy that could potentially be utilized worldwide (Job and Paesler, 2013). With this expansion to include the development of local human populations in ecotourism destinations, today, ecotourism involves visiting natural places in an environmentally-friendly manner and either learning, studying, or participating in activities that contribute to the conservation of that area and support the local community (Garen, 2000).

In theory, ecotourism should contribute to conservation, sustain (and hopefully improve) the lives of local community members, involve responsible action from both tourists and the tourism industry, and stress community involvement (Bhattacharya et al., 2011). Ecotourism is different from other more traditional tourism types in that ecotourism actively aims to contribute to sustainable development, with a particular focus on local rural communities that inhabit these pristine and often biodiverse environments (Ferraro and Hanauer, 2014). Beyond combining development and conservation effectively, the increased globalization of the economy, an increase in the ease of international travel, and a growing interest in the environment has made ecotourism a budding industry and one of the fastest growing tourism types today, only adding to the appeal of promoting ecotourism (Mylan, 2018).

Although ecotourism numbers are difficult to calculate due to a high amount of greenwashing in the industry and an inability to effectively separate ecotourism from nature tourism, estimates suggest that ecotourism has roughly grown at an annual rate of 10-12% over the past decade or more (CREST, 2019). This is a growth rate that is approximately three times faster than the tourism industry as a whole (WTTC, 2018). Presently, ecotourism represents roughly 20-30% of annual global tourism growth and there are approximately 500 million tourists that participate in some form of ecotourism every year (GlobalData, 2017). Because of the potential ability of ecotourism to promote sustainable development in local communities, combined with its growing popularity and increasing economic value, ecotourism has been embraced by the developing world and is now included in the economic development and conservation strategies of many developing countries (Amalu et al. 2018). Furthermore, with the development of an ecotourism industry, rural communities in these developing nations aim to evolve from an economy of commodity production to a site of consumption (Gill and Reed, 1997).

While a complex relationship exists between ecotourism, conservation and development, this relationship can benefit community stakeholders and the environment (both directly and indirectly) when the planning approach involves local participation (Sofield, 2003; Rahman, 2010; Hitchcock, 1993). Ecotourism destinations, especially those in developing countries, are often small, both in population and geographic scope (Salehi et al. 2017). However, regardless of size, each contains multiple stakeholder groups representing a variety of interests. When these stakeholder groups are included in the planning stages of ecotourism development, the community has control over the type,

scale, and intensity of any and all ecotourism activities (Simmons, 1994; Mitchell and Ashley, 2010).

Beyond wanting to involve the local community in the planning stages, ecotourism, as a predominantly service-based industry, is dependent on the support and cooperation of local residents in the host community (Cole, 2006). Since ecotourism is often found in remote areas, ecotourism businesses rely on the local community for the workforce and rely on local businesses to provide their services, both to tourism operators and to visitors (Snyman, 2016). This can only be accomplished when the community generally supports the industry and views visitors in an overall positive light (Stronza, 2001). With the support of the community, ecotourism can potentially economically benefit all community members, either directly or indirectly (Serenari et al. 2016).

Examining the socioeconomic benefits of ecotourism more generally, ecotourism should (Blamey, 2001; Medina, 2005):

- Empower locals and encourage local businesses
- Create permanent jobs for locals
- Retain earned profits within the community
- Reduce the wealth gap and promote equal distribution of revenues
- Drive the development of other related industries
- Encourage cultural appreciation and protect cultural heritage
- Foster respect for different cultures and human rights

These commonly cited benefits of ecotourism are well represented in the literature and are often used to measure the success of ecotourism at the local level (Muhanna, 2007).

While all are important, the creation of employment opportunities and a diversification of

the economy is often considered the most important contribution that ecotourism provides to socioeconomic development of local communities (Mearns, 2012). This is because through the creation of job opportunities for local residents and the support for local businesses that ecotourism provides, ecotourism will directly contribute to improving the livelihoods of those in the local community by ensuring that revenue obtained from ecotourism stays within the community itself (Kline and Slocum, 2015).

Empirical evidence demonstrates that cash income created through ecotourism has the ability to stimulate income diversification and help alleviate risk/poverty and create a sense of financial security for households (Ahebwa et al. 2012). Several studies report that a majority of households in ecotourism communities see increases in income due to ecotourism (Das & Hussain, 2016). While these increases in household income may be rather modest depending on the community, evidence suggests that higher income levels are directly correlated to the provision of public goods. Some examples include but are not limited to improving community infrastructure or investing in the local educational system (Hunt et al. 2015). Furthermore, literature suggests that ecotourism may have a positive impact on land value, with land in ecotourism communities being valued higher than land in communities dependent on other livelihoods such as forestry, agriculture, or ranching (Horton, 2009).

Beyond the financial benefits of ecotourism, these same benefits may also have potentially positive environmental implications (Matarrita-Cascante et al., 2010). For example, research suggests that through their participation in ecotourism, households in these communities have the opportunity to cease participating in livelihoods that are more environmentally-damaging (e.g. hunting, agriculture, livestock) (Taylor et al. 2002).

Furthermore, with ecotourism providing the community with revenue, community members are more likely to favor conservation and have a positive attitude towards protecting the surrounding natural lands and biodiversity (Tsing et al. 2005). Through these changes, while ecotourism may still be impacting the environment in some negative ways, ecotourism may be helping protect these natural lands when compared to other potential land use types (Stem et al. 2003; Hunt et al. 2015).

While ecotourism in theory should contribute to the local community in principle, these benefits are much more difficult to achieve in practice and the outcomes are not always positive (Johnson, 2010; Butcher, 2006). How ecotourism contributes to sustainable development outcomes is a contentious topic due to research also demonstrating that ecotourism has the potential to lead to several negative socioeconomic impacts that may outweigh the benefits. Some of these negative impacts include (Watkin, 2003; Kiper et al. 2011):

- economic/revenue leakage
- inequality of wealth distribution
- substitution of jobs requiring skilled labor with lower-paying service jobs
- crime rates and overcrowding
- cultural insensitivity and loss of traditional customs

Beginning with economic leakage, one of the most compelling benefits of ecotourism is to attract international tourists and earn this foreign capital for not only developing countries, but specifically for rural communities. Since it is often tourists from developed countries that are capable of travelling internationally, ecotourism represents this transfer of foreign currency from the developed to the developing world

(Wunder, 2000). However, while this does occur to some extent, research suggests that a majority of funds earned through ecotourism do not stay within the local ecotourism destination (Meyer, 2008).

Economic leakage refers to the phenomena when money earned in one location (e.g. an ecotourism destination) does not stay in that location but instead goes to other parts of the country, back to its original source (e.g. the home country of the visiting tourist), or even some other location depending on the travel services utilized by tourists (Hampton and Jeyacheya, 2020). This results in a diminishment in the ability of revenue to be reinvested and spent within that destination location. Through this process, the local community, especially those that are not directly involved in ecotourism, will not benefit from the presence of ecotourism, but instead may be worse off when compared to the time before ecotourism began if their livelihood pre-ecotourism has been disrupted (Lundberg et al. 1991). Some examples of economic leakage specifically related to ecotourism are (Kim et al. 2019; Mill and Morrison, 2009):

- the need to pay tour operators (who are often not found in the local destination but are instead hired for day/overnight trips to the destination),
- the import of products and other amenities that appeal to international visitors,
- booking travel to/from the local destination through either international or national transportation providers (rather than from a local company),
- the hiring of ecotourism employees in the destination that are not from the local community but instead solely work at the destination but live and have expenses in a different location.

According to several studies, it is estimated that up to 90% of tourism spending leaks out of local destinations (Meyer, 2008). With these estimates, researchers are skeptical of the contribution of ecotourism to local community development (Howitt and Mason, 2018).

In regards to wealth inequality, research suggests that an unequal distribution of wealth resulting from ecotourism exists for several reasons (Ma and Wen, 2016). This unequal wealth distribution is related to the phenomena that ecotourism is particularly prevalent in developing countries where there are many economic incentives to develop and promote ecotourism quickly (Ma et al. 2019). With this desire to develop rapidly, many communities desiring to establish ecotourism often rely on foreign investments or the involvement of stakeholders outside of the community itself to aid in the process.

Through this, communities will often give control of ecotourism development to public or private companies that have their own set of interests that may or may not align with the needs and wants of the community members (Ashley and Jones, 2001). This may not only lead to certain groups or individuals within the community obtaining most of the benefits from ecotourism (especially those that are directly involved with ecotourism operations), but since these stakeholders may also be located outside of the community, this phenomenon can also further contribute to economic leakage out of the local community (Schilcher, 2007).

Beyond investments from stakeholders outside of the community potentially leading to economic leakage, even in the instances where a majority of the economic benefits do stay within the local community, these benefits are often constrained to a small percentage of households, which contributes to the unequal distribution of wealth reported in some ecotourism communities (Scheyvens, 2009). These households are often

those that have the economic capability or rights to run businesses connected to ecotourism, develop and operate ecotourism activities, or have access to the most profitable/popular ecotourism destinations within that area. With this existing barrier, the revenues related to the presence of ecotourism within the community are often restricted to this select few, and not available to all local groups (Holden et al. 2011). This inequitable distribution of economic benefits amongst the community can discourage participation in ecotourism, reduce community support for the industry, and create and amplify community divisions (Palmer and Chuamuangphan, 2018). Furthermore, in some cases, some groups within the community may be worse off when compared to a time before ecotourism. This is because as ecotourism grows and becomes more prominent in the community, their traditional livelihoods may become unnecessary or obsolete and they lose this source of income that they were dependent on. Beyond losing a source of income, as the community shifts to ecotourism, these groups that may potentially be worse off are then forced to adopt alternative livelihoods, some of which may be more detrimental to the environment than their traditional livelihood was pre-ecotourism (Manwa and Manwa, 2014).

Focusing on groups that may potentially be worse off with the presence of ecotourism, one common criticism of the industry is that while it creates jobs, many of these jobs are often low-paying service jobs. While job creation and economic diversification is a positive benefit, examples exist of ecotourism disrupting local economies and replacing higher paying jobs requiring skilled labor (i.e. forest and logging management) with these service industry positions that often only offer minimum wage (Chirenje, 2017). Ecotourism may also lead to the inability of community members

to access land that they depend on for their traditional livelihoods, forcing them to adopt a new livelihood (Adams et al. 2004). Also, despite ecotourism creating benefits for some communities, looking more broadly at the national level, many communities that do not have the privilege of participating in ecotourism often complain of being marginalized and ignored when development strategies heavily rely on ecotourism as the major proponent of community development at the local level (Kiss, 2004). This inability of some communities to participate while others reap all of the benefits of ecotourism leads to wealth inequality at a much larger level.

Lastly, although ecotourism has the potential to create a positive socio-cultural impact by empowering locals, creating a better understanding of other cultures, and advancing social customs and human rights, there also exists instances where ecotourism can negatively impact a community socio-culturally (Almeida Garcia et al. 2015). Ecotourism can result in overcrowding, increased crime rates, displacement from traditional or culturally important land, and increases in drug and sex related crimes just to name a few of the potential negative cultural impacts (Andereck et al. 2005; Diedrich and Garcia, 2009). In addition, ecotourism may lead to cultural erosion and a loss of local customs through phenomena such as the demonstration effect, otherwise explained as the adoption of the culture of tourists by the local community (Gursoy et al. 2002). While this may not be considered a negative impact depending on the customs that are lost, in some cases, this is seen as a negative impact of ecotourism by ecotourism researchers in that it often represents a spread of Western cultures across the globe and a loss of cultural identity in these local communities. However, it may be the case that local community members see these impacts as an overall positive change to the community.

Ecotourism in Costa Rica

Costa Rica contains roughly 0.035% of the world's landmass but disproportionately contains between 4-5% of the world's total biodiversity (Honey, 2003). This is in part due to Costa Rica's high variability in geography and climate, which leads to the existence of 20 life zones within the country ranging from beaches and mangrove forests to cloud forests (Jones and Spadafora, 2016). In order to protect these high levels of biodiversity, more than one-quarter of Costa Rica's land is now under some form of public/private protection, with some examples being national parks, wildlife refuges, biological reserves, and protected zones (Sanchez, 2018). These high levels of biodiversity across a wide range of biogeographic regions, all within a relatively small geographic space, are main reasons that Costa Rica attracts large numbers of visitors each year and is considered one of the most popular ecotourism destinations in the world today (Hintzen, 2014). Other factors contributing to its popularity include its proximity to the United States, the largest source of international tourists, and the high perceived safety and stability of the nation when compared to other potential ecotourism destinations worldwide (Weaver, 1998).

Ecotourism in Costa Rica gained traction in the late 1980s when Costa Rica decided to focus on conservation and sustainability and underwent structural reforms that curbed deforestation and instead opted for conservation, reforestation, and protection of the nation's natural areas (Howitt and Mason, 2018). These changes occurred in tandem with other political reforms that resulted in the abolishment of the military and the restructuring and stabilization of the national economy by shifting to an export-oriented economic model (Hidalgo, 2014) By the early 1990s, ecotourism was Costa Rica's

largest export and Costa Rica was known globally for its national conservation strategies that helped combat the previous decades of deforestation, and led to an almost doubling of forested land found in the country (Minca and Linda, 2000). As international tourism and ecotourism have both gained popularity over the past two decades, Costa Rica has seen steady growth in regards to tourism numbers and the economic incentives associated with ecotourism.

Today, Costa Rica remains one of the major ecotourism destinations in the world and Costa Rica heavily relies on ecotourism as part of its economic activity (Braun et al. 2015). In 2016, tourism directly accounted for 6.4% of the country's total GDP with its total contribution being around 13%. In this same year tourism also represented 37% of Costa Rica's total exports (ICT, 2017). Revenues from ecotourism in Costa Rica grew 48% between 2009-2017 and totaled US\$3.83 billion in 2017 (ICT, 2018), with predictions to continually increase in the coming years. In addition, the tourism industry accounts for roughly 10% of all positions, employing over 200,000 people across the country.

In 2018, the most recent year with data available, 3 million international tourists visited Costa Rica, making it one of the most popular tourist destinations in Central America (WTO, 2020). While not all of these visitors participate in ecotourism, it is estimated that up to 80% of these visitors participate in ecotourism related activities, adding further evidence that Costa Rica is one of the most popular ecotourism destinations globally. Data suggests that the typical tourist spends 12 days in the country and spends an average of US\$1,400 during their stay (OECD, 2020). Projections by the

Costa Rican Tourism Institute state that international arrivals will reach 4 million by the year 2022 (ICT, 2018).

Ecotourism Certification

As ecotourism has become increasingly popular around the world, the industry has developed several strategies to help ensure that ecotourism operators are upholding the principles of ecotourism and acting socioeconomically and environmentally responsible. Simultaneously, these same strategies are utilized to help prevent greenwashing within the industry (Spenceley, 2018). The most popular of these verification schemes created is ecotourism certification programs, with roughly 178 ecotourism specific certification programs in existence today (DESTINET, 2019).

While each certification program is operated independently, with each containing its own set of criteria and standards, most programs contain both socioeconomic and environmental indicators in their assessment process (Dodds and Joppe, 2005; Chapter 2). Through this inclusion of both socioeconomic and environmental indicators, the goal of certification is to identify ecotourism operators that are contributing simultaneously to community development and conservation goals (Melo and Wolf, 2005). In return for operating sustainably, these certified operators receive benefits through the certification program (Ayuso, 2007). These benefits vary greatly by program, but many of these benefits revolve around the concepts of reducing operating costs (by adopting sustainable technology that reduces energy and resource consumption) and better attracting tourists (through the use of several marketing advantages, with the ability to utilize the certification logo on promotional materials being the most commonly offered) (Bien, 2005; Lebe and Zupan, 2012). As was stated in the previous chapter, while certification

programs can certify operators across tourism sectors, the most commonly certified sector is ecotourism accommodations, with many focusing exclusively on accommodations (Font and Buckley, 2001). Because of this focus on accommodations, this chapter also focuses solely on the certification of accommodations.

Despite certification being the most used assessment strategy, research suggests that certification has not accomplished its goals of identifying the best examples within the industry and eliminating greenwashing (Spenceley and Bien, 2013). Reasons for this include:

- Too many certification programs exist, causing confusion amongst tour operators about which to use/trust (Ko, 2005)
- Since all certification programs are voluntary, there has not been adequate market penetration and only a small percentage of ecotourism operators have chosen to participate in certification programs (Weaver, 2009)
- Few tourists are knowledgeable on certification programs. This means that although demand for ecotourism products is high, few tourists are taking the time to actively research and select ecotourism operators that are certified. This suggests that overall the demand for certified products is low and does not give enough reason for more ecotourism operators to participate in certification (Karlsson and Dolnicar, 2016).

Each of these reasons is a hinderance to the certification program agenda and reduces the capability of certification to advance the ecotourism industry towards accomplishing its stated goals. As a result of these shortfalls, it is difficult to say if certified accommodations truly represent the “best” accommodations in the ecotourism industry in

terms of contributing to community development and conservation (Klein and Dodds, 2017). Research needs to address these gaps in knowledge to ensure that certification and the ecotourism industry overall are positively contributing to the global movement towards sustainability and sustainable development.

Research Gaps and Questions

While research on ecotourism is extensive, most of the literature on its impacts are qualitative and have primarily used descriptive analyses (Das and Chatterjee, 2015). Within the studies that have examined ecotourism and its impacts empirically, few of these have been completed that assess ecotourism's impacts on the local level (Gartner and Cukier, 2011; Palmer and Chuamuangphan, 2018). Even among those that have explored the local impacts of ecotourism, they are often focused on the local environmental impacts and/or the attitudes of community members towards tourists and conservation initiatives, not on the socioeconomic impacts (Lapeyre, 2011; Kuvan and Akan, 2012; Nyirenda et al. 2019). Others have addressed the impacts of ecotourism on revenue, but solely from the perspective of the tourism operators, not in terms of the impact ecotourism has on household income (Spenceley, 2008; Rogerson, 2012; Umuziranenge and Muhirwa, 2017).

Very little empirical research has addressed how ecotourism has impacted community dynamics and the local economy, especially in regards to poverty alleviation (Snyman, 2014; Muganda et al. 2010; Ma et al. 2019). Lastly, in terms of research gaps, few empirical studies have assessed how available and utilized livelihoods change in a community over time once ecotourism is introduced and how ecotourism impacts the sociocultural characteristics of the community (Sharpley, 2014; Kimengsi et al. 2019).

While there is plenty of speculation on this topic in the literature, few studies have actually researched this topic at the community level (Lonn et al. 2018). Since one of the overarching goals of ecotourism is community development, it is imperative that research assesses how the industry affects the communities it is present in to truly determine if the benefits of ecotourism outweigh the associated costs. This study aims to fill this existing research gap and aid in determining if ecotourism truly helps create instances of community development that can be sustained.

Beyond looking at the community impacts of ecotourism in general, this study aims to identify existing differences between the impacts of certified and uncertified accommodations on the community and to see if community members view these accommodations differently (i.e. if one is seemingly benefiting the community more than others). To my knowledge, no previous research has empirically examined the impacts of ecotourism certification on the local community, an important topic that must be assessed if the industry continues to support and advertise certification. Furthermore, no studies to my knowledge have examined how certified and uncertified accommodations impact the communities they are present in and if differences exist between the two groups.

While the previous chapter addresses this issue from the perspective of the accommodation, the study presented here examines the impact of certification on community development from the perspective of the community members themselves. This is an important viewpoint to consider and allows us to truly examine and better understand the relationship that exists between ecotourism accommodations, ecotourism certification, and the surrounding community. In addition, by examining the impacts of ecotourism and certification through the eyes of community members, we can determine

if a disconnect exists between the stories given to us by accommodations (Chapter 4) and those given by community members (this chapter). This comparison has yet to be presented in the literature and aims to advance both the ecotourism and certification literature by contributing to the understanding of ecotourism's impacts while simultaneously helping develop an understanding of certification and its accomplishments thus far.

This chapter focuses primarily on the socioeconomic impacts of ecotourism and utilizes household livelihood surveys to address local economic issues such as sources of income, changes in household income over the previous decade, distribution of wealth, and availability of employment opportunities. In addition, the household livelihood survey also touches on social issues such as crime rates and how these have changed over the past decade. The research questions addressed in this study are:

- How does ecotourism impact community and household prosperity (including distribution of wealth) and available livelihoods?
 - How does certification impact these same community dynamics?
- Does working at an ecotourism accommodation result in a higher household income when compared to households that have no members working at an accommodation?
 - How does certification impact household income, if at all?
- How has household income changed over the past decade?
 - What are reasons given for these changes? Do they include ecotourism and/or certification?

- As ecotourism has become more established in the community, have community members seen changes, for better or worse, regarding social issues?
 - What are the reasons given for these changes? Are they attributed to ecotourism?

With these research questions, the hypotheses that will be tested in this study are:

- Hypothesis #1 – I hypothesize that a majority of households are at least indirectly associated with the ecotourism accommodations, suggesting a shift in the local economy from agricultural- or livestock-based to more ecotourism dependent.
- Hypothesis #2 – I hypothesize that households with at least one member working for an ecotourism accommodation will have a higher household income when compared to households with no members working for an ecotourism accommodation.
- Hypothesis #3 – I hypothesize that households with at least one member working at a certified accommodation will have a higher household income when compared to households that only have members working at uncertified accommodations.
- Hypothesis #4 – I hypothesize that a majority of households have seen an increase in household income over the previous decade as ecotourism (and Costa Rica as a destination) has become more popular and attracted more tourists to the area.
- Hypothesis #5 – I hypothesize that community members will report increases in population and crime rates within their communities over the past decade, but will also report that community infrastructure and social initiatives have also improved over this same period.

METHODS

Research Design

In order to address these research questions, this study uses a household livelihood survey that was conducted with community members in three Costa Rican communities during the March – June 2018 time period. This study builds upon the research presented in Chapter 4 and helps develop a more in-depth understanding of the impacts of ecotourism and certification by assessing these impacts from the perspective of community members. With this chapter, this dissertation now examines the ways in which ecotourism contributes to community development (both positively and negatively) both from the eyes of the accommodation and the community. Additionally, this study compares the accomplishments of and community attitudes towards certified and uncertified accommodations. This allows us to determine if certification truly does identify the ecotourism accommodations that best represent ecotourism's core principles.

Community Selection

Costa Rica was selected as the case study for several reasons. First, it is considered one of the most popular ecotourism destinations in the world, with a majority of tourists participating in some form of ecotourism while visiting the country (Howitt and Mason, 2018). Second, since this study examines ecotourism certification programs, it was desired to select a destination where the certification program had existed for at least 15 years (as of 2020) to ensure ample time for any impacts of certification itself to emerge in these communities. Lastly, a case study where ecotourism had been studied prior was wanted to guarantee that an extensive literature base existed. This study utilizes

this literature base as a foundation, but also hopes to build upon this base by filling existing research gaps.

In the initial phase of community selection, I first identified and mapped all accommodations in Costa Rica and distinguished accommodations based on certification status. Through this process, I discovered that many of the coastal areas of Costa Rica are characterized by many accommodations, and communities in these zones are often extremely close in proximity, with little indication of distinct community boundaries. With this in mind, I decided to focus entirely on inland communities where the impacts of ecotourism and certification on communities specifically could more easily be determined. This was because any other potential sources of impact beyond ecotourism and certification were limited due to inland communities being more isolated from each other.

Once coastal areas were removed, I then determined potential inland communities that could be used by selecting the community's center point and creating a 20-km buffer around this point. If no other communities were present within this buffer and all accommodations associated with that community were also found within this buffer, then the community was included on a list of potential candidate communities for field research. Once this process was complete, a total of 9 communities were identified that were considered geographically distinct from other surrounding communities. While there are many more communities in Costa Rica that may have been geographically isolated, since this study focuses on ecotourism, only communities that had ecotourism accommodations present within them were identified and considered for inclusion in these analyses.

Lastly, since this study aims to discuss the impacts of ecotourism and accommodation certification, it was desired to select communities that represented as wide a range as possible when it came to three identified categories: accommodation size, accommodation price, and certification status. With this in mind, the final stage of community selection was creating an “accommodation matrix” that matched accommodations with the combination of characteristics from each of these three categories. Once all accommodations were matched to their respective categories, final communities for field research were selected.

For this accommodation matrix, the first step was to break down accommodation size and accommodation price into distinct sub-categories. In order to do this, I selected a subsample of 100 accommodations (both certified and uncertified) and took general note of their size and price per night. Prices per night were recorded based on the price of a standard room for one night during the peak tourism season. Based on this subsample, I then created distinct sub-categories for size and price according to general trends/gaps that emerged. These resulting sub-categories were as follows:

- Accommodation Size
 - Small – 1-12 rooms
 - Medium – 13-22 rooms
 - Large – >22 rooms
- Accommodation Price
 - Low – <\$100/night
 - Middle – \$101-200/night
 - High – >\$201/night

With these newly refined categories, the resulting accommodation matrix was created (Table 5.1) and accommodations in the nine identified communities (n = 37) were matched to their respective category. Once all accommodations were matched to their corresponding position in the matrix, there were a total of eleven positions that were filled on the matrix (Table 5.2).

Table 5.1.

To select sites for field research, an accommodation matrix based on accommodation size, price, and certification status was used to determine which communities and their associated accommodations best completed the matrix. Since the goal of this study was to determine the impacts of ecotourism accommodations and certification on communities, it was desired to select communities for field research that represented as wide a range of accommodations as possible based on general accommodation characteristics.

Small x Low x Certified	Small x Low x Uncertified	Small x Middle x Certified
Small x Middle x Uncertified	Small x High x Certified	Small x High x Uncertified
Medium x Low x Certified	Medium x Low x Uncertified	Medium x Middle x Certified
Medium x Middle x Uncertified	Medium x High x Certified	Medium x High x Uncertified
Large x Low x Certified	Large x Low x Uncertified	Large x Middle x Certified
Large x Middle x Uncertified	Large x High x Certified	Large x High x Uncertified

Table 5.2.

Completed accommodation matrix demonstrates that ten matrix positions could be filled by accommodations in the nine candidate communities. The nine candidate communities contained a total of 37 accommodations. Each of these accommodations was matched to their corresponding position. All matrix positions that were matched to an accommodation are presented in grey. Once the matrix was completed with all accommodations, several accommodations matched to the same matrix position.

Small x Low x Certified	Small x Low x Uncertified	Small x Middle x Certified
Small x Middle x Uncertified	Small x High x Certified	Small x High x Uncertified
Medium x Low x Certified	Medium x Low x Uncertified	Medium x Middle x Certified
Medium x Middle x Uncertified	Medium x High x Certified	Medium x High x Uncertified
Large x Low x Certified	Large x Low x Uncertified	Large x Middle x Certified
Large x Middle x Uncertified	Large x High x Certified	Large x High x Uncertified

While there was some overlap when compiling the matrix with multiple accommodations matching to one matrix position, it was discovered that three communities in particular contained accommodations that filled all ten unique matrix positions. I decided to focus my field research on these three communities, since adding an additional community did not add any further heterogeneity to the sample in terms of differences in accommodations. The names and locations of these communities and accommodations are not included in this study in order to protect study participants and maintain the anonymity promised. However, I can say that these communities were located in the provinces of Alajuela and San Jose in order to give some context. Communities will be referred to as Community #1, #2, and #3 from this point forward.

Further information on these communities and the accommodations within them is presented in the Results section.

Household Livelihood Survey

The household livelihood survey was developed and administered between January – June 2018. Prior to conducting the survey, I received IRB Approval, which included having the survey translated to Spanish and then back-translated by two independent parties as part of the approval process. This was done to ensure that the Spanish version (the version used when the survey was conducted) was similar in meaning and intent when compared to the original English version.

This survey was conducted in the selected three communities that were identified via the methods explained above. All surveys were completed in-person by me. Since selected communities were relatively small, with none having more than 50 households, there was no strategic sampling method used. The goal was to survey all households possible in each community. While this was not possible due to some households not wanting to participate or not having an adult (18 years or older) present when visited, all communities had at least 80% of households surveyed (Table 5.4).

The created survey sought information from the respondent regarding certain household and community characteristics and how each of these has changed over the past decade. This time frame was selected because research demonstrates that any period longer than one decade is difficult for a survey respondent to recall accurately (Nardi, 2006). Beyond information about the household and community, the survey also inquired about the relationships that exist between existing ecotourism accommodations in the area and the community. Once the survey was finalized, the survey contained a total of

24 questions relating to the household, the socioeconomic characteristics of the community, and accommodation relations. All survey respondents were asked these same 24 questions. The full list of topics covered in this survey can be found in Table 5.3 and the survey itself can be found in the Appendix C.

Table 5.3.

Topics covered in household livelihood surveys conducted with community members in three Costa Rican communities. Household livelihood surveys were conducted in three identified ecotourism communities in Costa Rica between March-June 2018, resulting in a total of 105 surveys completed. Survey contained a total of 18 questions that were asked to all participants.

Age, Gender, and Marital Status of Respondent	Changes in Population
Years Respondent has Lived in Community	Changes in Ethnic Diversity
Age and Gender of all Household Members	Changes in Community Infrastructure
Education Level of all Household Members	Changes in Community Services/Programs
Sources of Income for all Household Members	Changes in Available Job Opportunities
Total Annual Household Income	Changes in Crime Rates
Percentage of Household Income Saved	Changes in Safety, Security, and Happiness
Possessions Owned by Household	Accommodation's Contributions to Community
Changes in Income	Importance of Ecotourism to Community

Survey questions were either fill-in-the-blank/open-ended, “select the best option”, or developed using a Likert scale. Fill-in-the-blank/open-ended questions were used when a detailed and precise answer was wanted. Some examples of these questions were the age, gender, and education level of all household members. “Select the best option” questions were utilized when questions regarded sensitive information that

respondents may not want to address precisely (i.e. total household income and amount saved). In these questions, respondents were given pre-determined options (often in the form of various ranges of values/percentages) that they could then select the most applicable option from, as opposed to stating an exact value. This was done in order to keep respondents comfortable throughout the surveying process and to ensure that their answers were as honest as possible (Nardi, 2006).

“Select the best option” questions were also used when respondents were asked to recall information from a decade ago. This way respondents did not feel obligated or pressured to give an exact answer, but rather an approximation. If respondents had not lived in the community for a decade, they were asked if they have noticed any changes since they had lived in the community. If they were not comfortable answering these questions specifically because of not living in the community long enough, these questions were skipped for these respondents.

Lastly, two questions on the survey used a 5-point Likert scale in order to determine how various aspects of the community have changed over time and to understand if they had improved or worsened. These aspects included but were not limited to community infrastructure, services, and programs and overall sense of safety, security, and happiness in the community. Respondents were asked to choose from options ranging from “much worse” to “much better”, with a “no change” and a “Does not exist” option also included.

I conducted all surveys in-person with the head of each household (or at least with an individual that was 18 years or older). While a hardcopy of the survey was given to each participant during the survey to use as a reference, all survey data were recorded on

a virtual copy of the survey and stored virtually. Each answer recorded on this virtual survey was then verified by the respondent to ensure accuracy. Once all three communities were surveyed, a total of 105 surveys were completed. A breakdown of each community by number of surveys completed and total number of households can be found in Table 5.4 to demonstrate that survey results represent a majority of households in that community.

Table 5.4.

Sampling efforts in each community resulted in at least 80% of households present in community surveyed. Since each community was relatively small in size, there was no random sampling or purposive sampling method used to select survey participants.

Rather, all households (where there was an adult 18 years or older present) were asked to participate. This resulted in a total of 105 surveys completed across the three communities, with a majority of households in each community participating. Two rows for Community #3 are displayed due to a portion of survey respondents not permanently residing in Community #3. The row “Community #3” represents those surveys that were with permanent residents only, and “Community #3 (all)” displays all surveys completed. The total number of households and proportion surveyed are left blank for Community #3 (all) because of the inclusion of these surveys with non-permanent residents.

Community	# of Surveys	Total # of Households	Proportion Surveyed
Community #1	34	39	87.2%
Community #2	39	46	84.8%
Community #3	21	22	95.5%
Community #3 (all)	32	-	-

Community names are not mentioned in this study in order to protect anonymity of survey respondents. As seen in Table 5.4, Community #3 presented an interesting

caveat in that several of the “households” surveyed were actually with respondents living in accommodation owned housing. This housing was intended for employees that would commute from other surrounding communities to work at these accommodations. With this housing, employees were able to stay in the community for the duration of their shifts (4-5 days) and then return to their respective homes and families in these other communities for their days off. Because these were neither permanent households nor did the individuals live in the community permanently, these households were not included in the overall number of households present in the community. When looking solely at the proportion of permanent households surveyed in Community #3, 95.5% of permanent households were included, as is seen in Table 5.4 in row “Community #3”.

Statistical Methods

The household livelihood survey collected nominal, ordinal, and ratio data. Survey data were compiled into several different groupings in order to assess differences between communities, differences between households that have at least one member working for an accommodation and those that do not, and differences that exist between households with members working at certified accommodations versus those that have members working at uncertified accommodations. In addition to these groups, survey data were also assessed as a whole in order to discover any general trends that exist within the data overall.

While nominal data cannot be analyzed statistically, nominal data were assessed and where applicable, responses are reported as frequencies and percentages of total respondents in order to demonstrate the most common answers given. In other cases,

nominal data are used as a means of better informing the presented conclusions and providing further context for these conclusions.

When data were separated into distinct groups, ordinal data were the dependent variables in these cases and were assessed using a non-parametric Kruskal-Wallis Test to determine if differences existed between these created groupings. When survey data were assessed as a whole, since this constitutes just a single group, univariate statistics are presented which include the median, quartiles, and percentiles. Ordinal data is also visualized in various graph types to better demonstrate research findings.

For ratio data, since these data were the dependent variables when survey data were separated into groups, parametric t-tests and ANOVAs were utilized to statistically assess data. When data were groups together, since statistical tests were not possible with their only being one group, statistics such as the mean, mode, median, and standard deviation are presented in order to show general trends observed across households and communities.

RESULTS

General Community Characteristics

Each of the three communities utilized in this study differed in either the number of accommodations or in the size and cost of these accommodations. This information is provided here in order to help give some further context for the study.

Community #1 had three ecotourism accommodations, with one of these accommodations being certified. Similarly, Community #2 also had three accommodations, with one being certified. Community #3 had a total of nine accommodations, with four certified accommodations and five uncertified

accommodations. While Community #1 and Community #2 did have the same number of accommodations, when we look further into each accommodation within these communities and look at size and cost, differences do exist, which may be a contributing factor in some of the community dynamics seen through the conducted household livelihood survey explained below. The range and mean size and cost of the accommodations within each of the three communities can be found in Table 5.5.

Table 5.5.

Accommodation characteristics across communities demonstrate that mean accommodation size is roughly similar but that accommodation cost per night differs.

Accommodation size and cost per night data were sourced from accommodation websites, with size being recorded by number of available rooms and cost per night being recorded based on the cost per night for a standard room during the peak tourist season. The mean and range of collected data are displayed to provide a general overview of accommodation characteristics within each study community.

	# of Rooms (Mean)	# of Rooms (Range)	Cost/Night in (Mean)	Cost/Night (Range)
Community #1	16.67	14-22	US\$112.33	US\$95-130
Community #2	12.33	10-15	US\$248	US\$97-470
Community #3	15	3-41	US\$188.67	US\$90-284

Based on these accommodation characteristics, you can see that there does exist some heterogeneity between accommodations, particularly when it comes to the cost per night. While there are some differences in accommodation size, particularly when looking at Community #3 having some larger accommodations, the mean accommodation size is very similar across communities, which is also characteristic of the accommodation industry in Costa Rica overall.

Referencing the accommodation matrix (Table 5.2) and the matrix positions each accommodation in these selected communities filled, Table 5.6 will link these positions to the specific community associated with that position.

Table 5.6.

Connecting specific accommodations to unique matrix positions revealed that the accommodations in the three selected communities filled all unique matrix positions, and any additional communities would not increase accommodation heterogeneity. In an effort to limit field work, accommodations in each of the candidate communities were linked to their specific matrix positions. This revealed that three communities in particular filled all possible matrix positions. Shaded cells represent filled matrix positions with associated communities provided in parentheses.

Small x Low x Certified (#3)	Small x Low x Uncertified (#2,3)	Small x Middle x Certified (#2)
Small x Middle x Uncertified	Small x High x Certified (#3)	Small x High x Uncertified (#3)
Medium x Low x Certified	Medium x Low x Uncertified (#1)	Medium x Middle x Certified
Medium x Middle x Uncertified (#1,3)	Medium x High x Certified (#1,2)	Medium x High x Uncertified
Large x Low x Certified	Large x Low x Uncertified	Large x Middle x Certified (#3)
Large x Middle x Uncertified	Large x High x Certified (#3)	Large x High x Uncertified

Beyond, community accommodation characteristics, it may also help to provide information on the overall population of these communities. Since there is no official census information available for these communities (the smallest scale of census data is at the county level), population was determined by summing the household members

reported in household surveys. While this may not be entirely accurate since not all households were able to be surveyed, it is the best population prediction method available. Community #1 had a population of roughly 134, Community #2 had a population of 189, and for Community #3, including only the households of permanent residents, the population was 102.

General Household Characteristics

The first portion of conducted surveys gathered general information about each household in order to obtain some form of demographic information about each household and each community. This information consisted of the age and gender of each household member, the number of years the survey respondent had lived in the community, the overall household size, and the level of education of each household member.

A summary of the respondent's age, the number of years the respondent has lived in the community, and household size for each community can be found in Table 5.7. As was mentioned above, data for Community #3 are reported three times utilizing different sets of data. This will be consistent across all analyses presented. This is due to a third of surveys conducted in Community #3 being with accommodation employees that did not live in the community permanently. The first results reported for Community #3 will always be utilizing data collected only from permanent households in the community (will be labeled "residents"). The second set of results for this community will utilize data only from surveys with non-residents (will be labeled "non-residents"). The third dataset for Community #3 will utilize all collected data regardless of residency status (will be labeled "all").

Table 5.7.

Communities did not significantly differ from each other in terms of respondent's age, but statistical differences did exist between communities when analyzing the number of years respondents had lived in the community and household size. General

demographic information was collected for each household surveyed. Kruskal-Wallis tests with pairwise comparisons were completed in order to determine significant differences between communities. All significant differences are marked with superscripts, with pairs representing statistically significant p-values.

	Mean	Mode	Median	Std. Dev.
Community #1				
Respondent Age (years) ^a	47	41	44	13.96
Years in Community ^c	36	34	34	21.64
Household Size ^d	4	5	4	1.93
Community #2				
Respondent Age (years) ^a	50	45	46	13.17
Years in Community ^c	40	8	41	20.14
Household Size ^c	5	5	5	1.7
Community #3 (residents)				
Respondent Age (years) ^a	51	68	51	14.64
Years in Community ^c	38	63	34	24.34
Household Size ^d	4	5	4	1.64
Community #3 (non-residents)				
Respondent Age (years) ^b	32	31	31	6.57
Years in Community ^c	N/A	N/A	N/A	N/A
Household Size ^d	4	3	4	0.924
Community #3 (all)				
Respondent Age (years) ^a	45	42	42	15.39
Years in Community ^c	38	63	34	24.34
Household Size ^d	4	4	4	1.42

Kruskal-Wallis tests were completed to compare communities. Respondent age resulted in a p-value of 0.001 with resulting pairwise comparisons also resulting in significant differences between Community #1 and Community #3 (non-residents) ($p = 0.001$), Community #2 and Community #3 (non-residents) ($p < 0.001$), Community #3 (residents) and Community #3 (non-residents) ($p < 0.001$), and Community #3 (all) and Community #3 (non-residents) ($p = 0.014$). Years living in community resulted in a p-value of 0.82, with no significant differences existing between communities. Household size resulted in a p-value of 0.082 with significant differences existing between Community #1 and Community #2 ($p = 0.032$), Community #2 and Community #3 (non-residents) ($p = 0.049$), Community #2 and Community #3 (all) ($p = 0.025$).

Education level was consistent across communities, with 96% of adults in these communities completing high school (secondary education). All children in each of the three communities were in school as well, with many respondents stating that it was the expectation that all children would complete their secondary education. Beyond secondary education, a total of 21 respondents (out of 105), or 20%, had completed an advanced degree of some sort, with 13 of these residing in Community #3 alone (9 of these were residents and 4 were non-residents). Out of these 21 respondents that obtained an advanced degree, 15 were involved in accommodation management/ownership.

The gender of respondents is reported here simply as percentages. In Community #1, 70.6% of respondents were male and 29.4% were female. In Community #2, 82.1% were male and 17.9% were female. For Community #3, examining surveys solely for permanent households, 85.7% of respondents were male and 14.3% were female. Lastly,

utilizing all surveys for Community #3, 71.9% of respondents were male and 28.1% were female.

Household Income and Assets

A large portion of the survey was completed with the intention of gathering data on the finances and assets of households in each of these three communities and connecting these data, when possible, to the role that ecotourism and certification play in each community's economic dynamics. The information collected in regards to finances and owned assets included: sources of income for each household member (of all those that were of working age), the total household income for the 2017 calendar year (given in ranges rather than precise values), changes in income over the past decade, and a determination of assets owned as a different proxy for household wealth. These data will be presented here separated by each of these listed topics.

Household Sources of Income

Respondents were given twelve options of industry/business types to choose from. These twelve options were:

- Agriculture and Livestock

- Manufacturing

- Construction

- Trade and Repair

- Retail

- Hotel and Restaurant

- Public

Administration/Government

- Education and Health

- Financial or Insurance Institution

- Communications

- Pension/Remittance

- Other

While respondents were asked to pick the corresponding broad category, if they were willing, they were also asked to name the specific business that they were employed by in order to better help determine the specific causes of any observed differences in household income. This information was collected not only for respondents, but also for each household member that was of working age.

Table 5.8 breaks down community members and their associated households by their reported industry/sector of employment for all three communities. These data are not representative of just the respondents themselves, but of all their household members. All data is presented as percentages of the respective community's total population of working individuals (total number of people living in the households surveyed and 16 years or older). While "education" or "school" was reported for all children (under the age of 16), those individuals are not counted in these percentages.

Table 5.8.

Breakdown of households surveyed by the occupation of each household member when compared to total community population demonstrates that ecotourism and its related businesses are the predominant industries in each community. Household surveys asked for respondents to report the employment status and industry of each household member that was of working age. Data were then totaled and are reported here as percentages of the total working age population. Community #3 is represented in three columns, with the first column representing only permanent residents, the second column marked “non-residents” solely utilizing data collected from non-permanent residents, and the third column labeled “all” using all collected data. A Kruskal-Wallis Test utilizing these proportions resulted in a p-value of $p = 0.06$, but a significant difference did exist between Community #3 (residents) and Community #3 (non-residents) ($p = 0.026$).

Job Industry/Sector	Community #1^{ab}	Community #2^{ab}	Community #3 (residents)^a	Community #3 (non-residents)^b	Community #3 (all)^{ab}
Agriculture and Livestock	12.5%	22.4%	10.77%	0%	6.48%
Manufacturing	0%	0%	3.08%	6.98%	4.63%
Construction	4.17%	4%	6.15%	4.65%	5.56%
Trade and Repair	5.56%	3.2%	4.62%	4.65%	4.63%
Retail	8.33%	10.4%	7.7%	13.95%	10.19%
Hotel and Restaurant	43.1%	27.2%	52.31%	27.91%	42.59%
Public Administration	2.78%	4.8%	3.08%	4.65%	3.7%
Education and Health	6.94%	6.4%	4.62%	6.98%	5.56%
Financial Institution	4.17%	1.6%	0%	4.65%	1.85%
Communications	0%	1.6%	0%	0%	0%
Pension or Remittance	5.56%	5.6%	6.15%	16.28%	10.19%
Other	6.94%	12.8%	1.54%	9.3%	4.63%

Based on the reported occupations of each household member, a Kruskal-Wallis test was completed utilizing these proportions. Since the goal of this test was to determine if communities significantly differed from each other in regards to the relative size of different industries, it was necessary to correct for community size prior to running statistical tests. Each community was treated as if there were a total of 100 individuals and the percentages presented in Table 5.8 were then used to determine the representative number of individuals in that 100 that worked for each industry.

The completed Kruskal-Wallis test did not find a significant difference between groups ($p = 0.06$). However, post hoc comparison tests did find that a significant difference exists between Community #3 (residents) and Community #3 (non-residents) ($p = 0.026$). In other words, a significant difference existed between those in Community #3 that were permanent residents and those that were not in terms of what industry household members were likely to work for. Community #1, Community #2, and Community #3 (all) were not significantly different from each other nor were they significantly different from Community #3 (residents) or Community #3 (non-residents).

The largest industry/sector in each of the three communities was the “Hotel and Restaurant” industry. While this is not broken down in the above table since the original survey grouped these together and I wanted to maintain consistency, this can be broken down further based on the more detailed employment information given by respondents when asked if they could be more specific (Table 5.9). Percentages are reported as the percentages of the total population that is of working age. The two numbers provided for

each community in Table 5.9 will sum and equate to the “Hotel and Restaurant” percentage given in Table 5.8.

Table 5.9.

Separating the “Hotel and Restaurant” survey category into separate groups displays that more individuals in each community worked for hotels than for restaurants and that some significant differences did exist between communities. Source of income data from household survey were separated into further categories based on dialogue with respondents not formally asked in survey in order to determine the actual size of the accommodation and restaurant industries in each community. A Kruskal-Wallis test resulted in a significant difference between groups ($p < 0.001$). Pairwise comparison tests showed that significant differences existed between several community pairs, noted by superscripts in the table.

Job Industry or Sector	Community #1^{ade}	Community #2^{bc}	Community #3 (residents)^c	Community #3 (non-residents)^d	Community #3 (all)^{be}
Hotels	36.1%	17.6%	29.23%	25.58%	31.48%
Restaurants	7%	9.6%	23.08%	2.33%	11.11%

A Kruskal-Wallis test showed that there is a significant difference between communities in terms of the proportions of community members that work for hotels and restaurants ($p < 0.001$), suggesting that the size of these industries differs across communities. The following pairwise comparison tests identified that these significant differences were between Community #1 and Community #2 ($p = 0.004$), Community #1 and Community #3 (residents) ($p < 0.001$), Community #2 and Community #3 (non-residents) ($p < 0.001$), Community #3 (residents) and Community #3 (non-residents) ($p < 0.001$), Community

#3 (residents) and Community #3 (all) ($p = 0.01$), and Community #3 (non-residents) and Community #3 (all) ($p = 0.002$).

Household Total Annual Income

For total household annual income, respondents were given six ranges of income that they could select from that best matched their household's overall income for the year 2017. These ranges were:

- $\leq 2,000,000$
- $2,000,000 - 3,000,000$
- $3,000,000 - 4,000,000$
- $4,000,000 - 5,000,000$
- $5,000,000 - 6,000,000$
- $> 6,000,000$

Converting this to US\$ as a point of reference, ₡1,000,000 is equivalent to US\$1,679.53 utilizing today's currency conversion rate. Since each of the three communities surveyed were rural communities, these pre-determined household income ranges were selected based on available census data and economic data from the Costa Rican government for rural areas in Costa Rica. This method of utilizing income ranges rather than exact values was done in order to increase respondent privacy and comfortability with answering the question honestly by not asking for an exact income amount.

While collected data can be assessed in multiple ways, all of which may be insightful, for the purposes of this study, I focus on the impact that working at an accommodation impacts household income as well as the potential impact of accommodation certification status on total household income. Beyond these two tests, I also assess the impact of owning a business on household income. Since data is nonparametric, either Mann-Whitney U Tests or Kruskal-Wallis Tests with pairwise comparison tests were performed on the corresponding data.

Prior to analyzing data for the impacts that accommodations and certification have on household income, Table 5.10 presents descriptive statistics for household income in each community overall. A Kruskal-Wallis test resulted in no significant difference between groups ($p = 0.537$) with pairwise comparison tests also showed no significance between groups. For all communities, the mean household income reported was between income range choices #3 (₡3,000,000 – 4,000,000) and #4 (₡4,000,000 – 5,000,000), which suggests that average household income for each community was somewhere between ₡3,000,000 – 5,000,000.

Table 5.10.

Comparing household income across communities reveals no significant differences between communities. Survey respondents were given six income ranges to choose from to indicate their total household income. Precise income numbers were not asked for. Since data is non-parametric, data were assessed using a Kruskal-Wallis test which resulted in no significant difference between communities ($p = 0.537$). The following pairwise comparisons also resulted in no significant difference between any community pairs. Mean income ranged between income range options #3 and #4, which suggests that the average income range across communities is somewhere between ₪3,000,000 – 5,000,000. Since exact values were not collected, a precise mean for each community cannot be determined.

	Mean	Mode	Std. Dev.
Community #1	3.65	3	1.7
Community #2	4.15	5	1.31
Community #3 (residents)	3.76	4	1.41
Community #3 (non-residents)	3.73	3	1.49
Community #3 (all)	3.75	3	1.41

For Community #1, when assessing household total income by accommodation employment, a significant difference was found between households that had at least one member working for an accommodation and households that had no members working for an accommodation ($p = 0.003$) (Table 5.11). When looking solely at households that had at least one member working for an accommodation, and then comparing these households based on if a member did or did not work for a certified accommodation, there was no observed impact of certification status on household income ($p = 0.744$)

(Table 5.12). A significant difference was found, however, when comparing household income to business ownership ($p = 0.003$), with households that owned a business in the community reporting higher overall incomes (Table 5.13).

For Community #2, there was no significant difference found when comparing households that have members working for accommodations with households that do not ($p = 0.792$) (Table 5.11). However, when looking solely at households that had at least one member working for an accommodation, and comparing that group based on if one of those members worked for the certified accommodation in the community or not, a significant difference between groups was found, with households with at least one member working for the certified accommodation reporting a higher household income ($p = 0.002$) (Table 5.12). There was no significant difference found when comparing household income by households that owned a business to those that did not ($p = 0.213$) (Table 5.13).

Examining Community #3 without including the surveys for those respondents that did not permanently live in the community, there was no significant difference found between households based on accommodation employment ($p = 0.214$) (Table 5.11). When comparing households that had at least one member working for a certified accommodation to households that did not have members working for certified accommodations, but did have at least one member working for an uncertified accommodation, there was no significant difference found between groups ($p = 0.09$) (Table 5.12). Lastly, no significant difference was found when separating households that owned a business from those that did not own a business ($p = 0.918$) (Table 5.13).

Solely assessing the non-residents for Community #3, I was not able to assess if accommodations impacted household income since every household in this subset had at least one member working for an accommodation (the sole purpose these respondents were in Community #3 to begin with). This was the same case for the impacts of certification and the impacts of business ownership. All respondents worked for certified accommodations, meaning that there was no uncertified group in these data to compare it too, and no households in this subset were business owners.

Combining all data for Community #3, results did not change in terms of significance. There was no significant difference found when comparing households with at least one member working for an accommodation with households that had no members working for an accommodation ($p = 0.241$) (Table 5.11). No significant difference was found between households that had members working for certified accommodations and households that had members working for uncertified accommodations ($p = 0.11$) (Table 5.12). And lastly, business ownership did not significantly impact the amount of income reported by a household ($p = 0.611$) (Table 5.13).

Table 5.11.

While households with accommodation staff tend to report a higher income across communities, only in Community #1 did these households make significantly more.

Data presented are the average income range of household income reported by respondents. Data were separated for each community based on if a household contained an accommodation employee or not. Mann-Whitney U tests were completed separately for each community with the only difference found to be in Community #1, denoted by superscripts in the table.

	Accomm. Employee	No Accomm. Employee
Community #1	4.32 ^a	2.42 ^b
Community #2	4.3	4
Community #3 (residents)	3.94	3.26
Community #3 (non-residents)	3.72	N/A
Community #3 (all)	3.88	3.26

Table 5.12.

Households with members that work at certified accommodations tend to report a higher income than those with members that solely work at uncertified accommodation, but only significant difference between groups was found in Community #2. Data presented are the average income range of household income reported by respondents. Data were separated for each community based on if a household contained an accommodation employee, and then were further separated based on if this employee worked for a certified or uncertified accommodation. Mann-Whitney U tests were completed separately for each community with the only difference found to be in Community #2, denoted by superscripts in the table.

	Certified Employee	No Certified Employee
Community #1	4.43	4.21
Community #2	4.78 ^a	4.02 ^b
Community #3 (residents)	4.14	3.56
Community #3 (non-residents)	3.72	N/A
Community #3 (all)	3.99	3.56

Table 5.13.

Households with a business owner in Community #1 reported a higher income than households with no business owners. Data presented are the average income range of household income reported by respondents. Data were separated for each community based on if a household contained a business owner or not. Mann-Whitney U tests were completed separately for each community with the only difference found to be in Community #1, denoted by superscripts in the table.

	Business Owner	No Business Owner
Community #1	5.5 ^a	3.25 ^b
Community #2	4.44	3.9
Community #3 (residents)	3.8	3.73
Community #3 (non-residents)	N/A	3.73
Community #3 (all)	3.8	3.73

Changes in Income

As a way to determine how ecotourism has economically impacted the community and households over time, each household was asked how their household income has changed over the previous decade. Since the dates of accommodations opening is critical information for these analyses, information was gathered, where possible, on the opening dates of each of the fifteen accommodations across these three communities. Unfortunately, this information could not be found for each accommodation. I can, however, report on when the first accommodation in each community opened and also on when the most recent accommodation (dependent on available information) opened in the community. In Community #1, the first accommodation opened in 1996 with the most recent accommodation opening in 2009. In

Community #2, the first accommodation opened in 2002 with the most recent accommodation opening in 2011. Lastly, in Community #3, the first accommodation opened in 1988 with the most recent accommodation opening in 2012.

Similar to obtaining the household income information, this question gave respondents six percentage ranges to choose from, ranging from decreasing by over 50% to doubling. These ranges were given primarily because this question type asked for respondents to recall information from a decade ago, and previous research suggests that when recalling information from a period in the past, it should not be expected of respondents to give an exact answer, but rather an approximation (Nardi, 2006).

Examining changes in household income from the community level, households in all three communities primarily reported an increase in household income over the past decade and only a small portion in each community reported a decrease (Table 5.14). Statistically analyzing these reported changes in income showed that there were no significant differences between communities ($p = 0.97$) and Wilcoxon pairwise comparisons also were insignificant.

Table 5.14.

Households in all three communities largely reported an increase in household income over the previous decade. Survey respondents were asked to select a pre-determined percentage range that represented the household’s change in income over the previous decade. Ranges spanned several options of decreasing income, no change, and increasing income. Kruskal-Wallis test demonstrated that there was no significant difference between groups ($p = 0.97$) with pairwise comparisons also showing no significant differences between any individual pairs.

Change in Income (%)	Community #1	Community #2	Community #3 (residents)	Community #3 (non-residents)	Community #3 (all)
Decreased by 50%+	5.89%	2.56%	0%	0%	0%
Decreased by 1-50%	8.82%	5.13%	9.5%	18.2%	12.5%
No Change	23.5%	18%	28.6%	18.2%	25%
Increased by 1-50%	35.3%	56.4%	38.1%	45.4%	40.6%
Increased by 50%+	20.6%	18%	23.8%	9.1%	18.7%
Increased by 100%+	5.89%	0%	0%	9.1%	3.12%

While the initial plans for analyses were to attempt to connect these changes in income to specific accommodations and determine the role that ecotourism and/or certification has had on changes in income over time, these tests were not completed. This is because when I conducted each survey, any drastic changes in income observed were often attributed to a household member(s) coming of age and obtaining a job, providing an additional income source, or, were due to a household member retiring or opting to stay at home and be a caregiver/homemaker, leading to loss of a source of

income. There were only two instances reported where the loss of income was due to someone losing a job and accepting a different position that offered a smaller salary. Beyond these reasons, the household survey did not ask how long each household member had worked at each of their respective jobs. Without this information, it would be difficult to temporally track changes in income that were the result of specific employers.

Assets Owned

In order to examine a different proxy for wealth, survey respondents were given a table of different asset types and were asked to state how many of each the household owns. The assets utilized in the survey were:

- House (in community or elsewhere)
- Property/Land (in community or elsewhere) (in acres)
- Automobile (car)
- Automobile (motorcycle)
- Television
- Radio
- Computer
- Livestock (cows, horses, goats, sheep)
- Chickens

To provide further context, Costa Rica's currency is the colón. Comparing this to US currency as a reference, US\$1 is equivalent to ₡595.40. Since assets span a wide range of products, an average value for each asset was determined based on current market prices in Costa Rica and a total worth (in Costa Rican colones) was calculated for each household based on the reported assets owned. Because these communities are in rural areas, the asset values presented may not be entirely accurate, especially when considering that many of the assets (especially transportation) were used items.

Overall, regardless of community, the higher the household income, the higher number of assets owned. A Kruskal-Wallis test was completed for each community individually to assess the impact of income on total asset value. These tests resulted in a p-value of $p < 0.01$ for each community (Table 5.15). Pairwise comparisons and their results can be found in Table 5.15. Looking across communities and making comparisons, it seems that regardless of community, a reported household income of ₡4,000,000 or less often resulted in a statistically similar total asset value. Furthermore, a reported household income of ₡5,000,000 or more is associated with a higher total asset value, suggesting that ₡5,000,000 represents an income threshold, regardless of community.

Table 5.15.

Household income significantly predicts the total value of assets owned across all three communities. Household assets were assigned a monetary value and then total asset values were averaged for each community separated by reported household income. For the table, average values were rounded to the nearest thousand colones to help with table accessibility. A Kruskal-Wallis test was completed for each community to determine if income impacts total assets. Completed tests demonstrated a significant difference between income groups based on assets owned for each community. Resulting pairwise comparisons suggest that while significant differences exist between many of the income groups, there exists a large asset differential between those that make more/less than ₡5,000,000. While superscripts are used to identify significant differences, since a separate test was completed for each community independently, superscripts are used more than once, with each table column representing a different statistical test.

Household Income Range	Community #1	Community #2	Community #3 (residents)	Community #3 (non-residents)	Community #3 (all)
<₡2,000,000	₡22,568,000 ^a	₡22,914,000 ^a	₡21,867,000 ^a	₡23,343,000 ^a	₡22,374,000 ^a
₡2,000,000–3,000,000	₡23,153,000 ^a	₡23,281,000 ^a	₡22,579,000 ^a	₡23,678,000 ^a	₡22,957,000 ^a
₡3,000,000–4,000,000	₡23,427,000 ^a	₡24,194,000 ^a	₡23,043,000 ^{ab}	₡25,221,000 ^b	₡23,792,000 ^{ab}
₡4,000,000–5,000,000	₡27,654,000 ^b	₡26,742,000 ^b	₡24,388,000 ^b	₡25,884,000 ^b	₡24,902,000 ^b
₡5,000,000–6,000,000	₡29,899,000 ^c	₡30,310,000 ^c	₡27,084,000 ^c	₡28,492,000 ^c	₡27,568,000 ^c
>₡6,000,000	₡30,166,000 ^c	₡31,711,000 ^d	₡28,233,000 ^c	₡29,197,000 ^c	₡28,564,000 ^c

Beyond analyzing possessions owned by income group, asset value was also compared based on if a household had members working for accommodations or not. When compared this way, all statistical tests for total asset value for all communities

were not significant. However, when examining each individual asset and comparing between households that had at least one member working for an accommodation with households that did not, significant differences were found, particularly for modes of transportation. Examining car ownership, households with members working at accommodations were much more likely to own a vehicle, with the statistical test for Community #2 resulting in the highest p-value ($p = 0.045$). Examining motorcycle ownership, households with accommodation employees were also more likely to own motorcycles when compared to households with no accommodation staff, with Community #3 (all) resulting in the highest p-value of all communities ($p = 0.036$). There were no significant differences found for other household assets when examined individually, suggesting that reliable transportation is a priority for households with accommodation staff.

I also completed statistical tests between households that had members working for certified accommodations and households that had members solely working for uncertified accommodations. Each of these tests came back as not significant, suggesting that certification itself does not impact assets owned.

Community Characteristics

Beyond household income, I also wanted to gain insight into how each community has changed over the past decade when it comes to different socioeconomic dynamics. The survey focused primarily on the community characteristics of overall population, ethnic diversity, available job opportunities, and crime rates. The overall aim of this portion of the survey was to develop a clearer idea of shifts in community dynamics, especially to identify those changes that most community members have

witnessed and reported. Since each of these questions requires respondents to recall information from the past, questions included a range of answers (similar to a Likert scale) that respondents could choose from rather than requiring an exact answer. If a survey respondent had not lived in the community for a decade, or in the case of Community #3, where multiple respondents did not live in the community itself, respondents were not forced to give an answer and instead were given the option to skip the questions for this survey portion if desired. Since many respondents that did not permanently live in Community #3 chose to not answer this specific set of questions, results for Community #3 are not separated as in the above sections. Because some respondents in Community #3 chose not to answer questions or were not given the option to answer questions due to them not being present in the community long enough, the total number of responses reported for Community #3 is different from the number reported in the previous sections.

Population

For changes in population, survey respondents were given five options to select from that ranged from decreasing by more than 50% to no change to increasing by more than 50%. Respondents were asked to select the best option based on their knowledge and experiences over the previous decade. Results for all three communities are displayed in Table 5.16. A Kruskal-Wallis test completed comparing communities resulted in no significant difference between groups ($p = 0.83$) and pairwise comparisons were also not significant.

Table 5.16.

In terms of population growth, communities predominantly reported no change or an increase in population size. Survey respondents were asked how the community's population size had changed over the previous decade and were given predetermined options to select from. Data is presented as the percentage of respondents that chose each available option per each community. A Kruskal-Wallis test resulted in no significant difference between groups ($p = 0.83$).

	Community #1	Community #2	Community #3
Decreased by 50%+	0%	0%	0%
Decreased by 1-50%	0%	5.9%	0%
No Change	23.3%	35.3%	52.4%
Increased by 1-50%	50%	47.1%	47.6%
Increased by 50%+	26.7%	11.8%	0%

Ethnic Diversity

To determine if these communities have experienced changes in the ethnic makeup of the community, survey respondents were asked about ethnic diversity and were given three options to choose from: ethnic diversity has decreased, ethnic diversity has not changed, and ethnic diversity has increased. All communities overall reported no change in ethnic diversity of the community. Every single respondent in Community #1 and Community #3 selected no change in ethnic diversity over the past decade. The only community to have any reports of change in ethnic makeup of the community were in Community #2, where 17.6% of respondents (6 of 34) reported an increase in ethnic diversity.

Based on my own observations while in these communities, most respondents considered “ethnic diversity” to mean foreign residents or the immigration of people from areas outside of Costa Rica. From this perspective, while the population may have increased in each community, many of these immigrants were from other parts of Costa Rica, which respondents did not consider as increasing the ethnic diversity of the community. Community #2 was the only community out of the three surveyed where a portion of new residents immigrated from other countries, including places such as Mexico and Nicaragua.

Job Opportunities

Similar to the question regarding population change, survey respondents were given the same five options to choose from in regards to available job opportunities in their communities ranging from job opportunities have decreased by over 50% to no change to job opportunities have increased by 50%. Results are displayed in Table 5.17 and are separated by community. A completed Kruskal-Wallis test resulted in no significant differences between communities ($p = 0.47$) and following pairwise comparisons were also not significant.

Table 5.17.

Surveyed communities generally reported either no change or an increase in available job opportunities over the past decade. Survey respondents were asked how the number of available job opportunities within the community has changed over the previous decade and were given pre-determined options to select from. Results are grouped by community with descriptive statistics reported. A Kruskal-Wallis test resulted in no significant difference existing between groups ($p = 0.47$) with pairwise comparisons also being insignificant.

	Community #1	Community #2	Community #3
Decreased by 50%+	6.67%	0%	0%
Decreased by 1-50%	6.67%	11.8%	4.3%
No Change	30%	35.3%	52.2%
Increased by 1-50%	43.3%	47.1%	34.8%
Increased by 50%+	13.3%	5.9%	8.7%

In Community #1, respondents were much more mixed in their views on job opportunities in the community. 13.3% of respondents (4 of 30) reported a decrease in available opportunities. All respondents that reported a decrease in job opportunities were involved in the agriculture or forestry industries and not involved in ecotourism.

In Community #2, similar to Community #1, 11.8% of survey respondents (4 of 34) reported a decrease in available job opportunities and 35.3% reported no change. While 52.9% of respondents (18 of 34) reported an increase in opportunities. Again, similar to Community #1, all respondents that reported a decrease in job opportunities were involved in the agriculture industry and were not involved in ecotourism, either directly or indirectly.

Community #3 had one respondent that selected that there has been a decrease in job opportunities available in the community. This respondent was involved in the shrinking agriculture industry in this community. Rather, 56.5% of respondents (13 of 23) stated that there had been no change in the job market and 43.5% (10 of 23) stated that there had been an increase in available opportunities. Many respondents who selected that opportunities have increased attributed these increases to an expanding ecotourism industry and the accommodations in the area requiring a larger workforce.

Across communities, secondary information recorded during survey completion demonstrated that community members were very much aware that the community had shifted to a dependence on ecotourism and its related businesses for employment opportunities. It was openly acknowledged that the historic livelihoods of the community (e.g. agriculture, livestock, forestry) had decreased in prominence. However, it was also often stated, that while these jobs have disappeared, they were replaced with job opportunities through the ecotourism industry and the accommodations in the area.

Community Crime Rates

Since ecotourism can be associated with increases in crime in communities, I considered it important to gather the opinions of community members on this topic. To accomplish this, respondents were simply asked if they have noticed an increase in crime in the community in the form of a yes or no question. While they could have elaborated on how crime has changed, it was not a required component of the survey.

In Community #1, 36.7% (11 of 30) of respondents stated that crime had increased. While some chose not to elaborate on how crime has changed, those that did often related the increase in crime to an increase in drug use and trade. This however was

not necessarily linked to an increase in ecotourism, but was instead often associated with the proximity to the Nicaraguan border.

In Community #2, 44.1% (15 of 34) of respondents stated that they have noticed an increase in crime. As a side note, this was the only of the three communities to have an established police department present in the community. While reasons given for this increase in crime were not related to ecotourists themselves, it was often implied that the increase in crime was due to the recent immigrants to the community, who immigrated primarily to partake in the ecotourism industry. Lastly, 26.1% of respondents (6 of 23) in Community #3 reported an increase in crime in the community. Unfortunately, none of these respondents chose to elaborate on how crime had increased in their community.

A Kruskal-Wallis test was completed to compare communities, which resulted in a p-value of 0.39 with pairwise comparisons also not resulting in a significant p-value.

Community and Accommodation Relations

Beyond understanding how ecotourism has directly or indirectly impacted the socioeconomic characteristics of a community, I also wanted to better understand how ecotourism accommodations are directly impacting the community socioeconomically through the eyes of community members rather than solely from the perspective of the accommodation (Chapter 4). In order to do this, this survey gave respondents six options that they could select from in regards to how ecotourism accommodations were impacting the community, either positively or negatively. From these options, respondents could select all that they believed to be true (listed below).

While the original intention was to then be able to separate out these impacts based on whether or not an accommodation was certified, this ended up not being

possible for two reasons. First, since many households and respondents worked for an accommodation and it was no secret that I was also interviewing management/ownership at each accommodation, it was very quickly realized that respondents would talk very highly of their employer, regardless of if this accurately reflected their thoughts. Second, since community members were very well aware of their dependence on ecotourism and these accommodations, while negative impacts may exist, community members would not directly talk negatively about any specific accommodation. Because of these two factors, it was close to impossible to connect community contributions to specific accommodations. Rather, this section will provide a general overview of how community members viewed accommodations overall and the impacts that their presence has had.

In the survey, respondents were given the following six options regarding accommodation contributions to the community:

- 1) Provides jobs to local community members
- 2) Improves community infrastructure
- 3) Aids in community development
- 4) Creates/Expands markets or industries in the local economy
- 5) Creates educational or community service programs/opportunities
- 6) Negatively impacts the community

Respondents were then asked to select all that they deemed true. For Community #3, respondents who did not permanently live in the community were not asked this specific question.

Across all communities, it was the general consensus that ecotourism accommodations were positively contributing to the community (Figure 5.1). In every

community, it was highly acknowledged that accommodations were a main source of employment (Option 1) and that the presence of accommodations within the community further supported other markets/industries such as restaurants and retail stores (Option 4). Beyond this, respondents in Community #3 also placed emphasis on the contributions of the existing accommodations to the improvement of infrastructure in the community (Option 2) and in the educational and community services the accommodations created and provided free of charge to community members (Option 5).

In terms of negative impacts, while no respondents listed specific accommodations, some respondents did select that accommodations were negatively impacting the community socioeconomically. 14.7% of respondents (5 of 34) in Community #1, 17.9% of respondents (7 of 39) in Community #2, and 9.5% of respondents (2 of 21) in Community #3 selected this option. Grouping communities together, the two most common reasons given for why this option was selected were:

- Unequal pay between accommodations (9 of 14 respondents)
- Loss of jobs in alternative livelihoods (e.g. agriculture or forestry) (10 of 14 respondents)

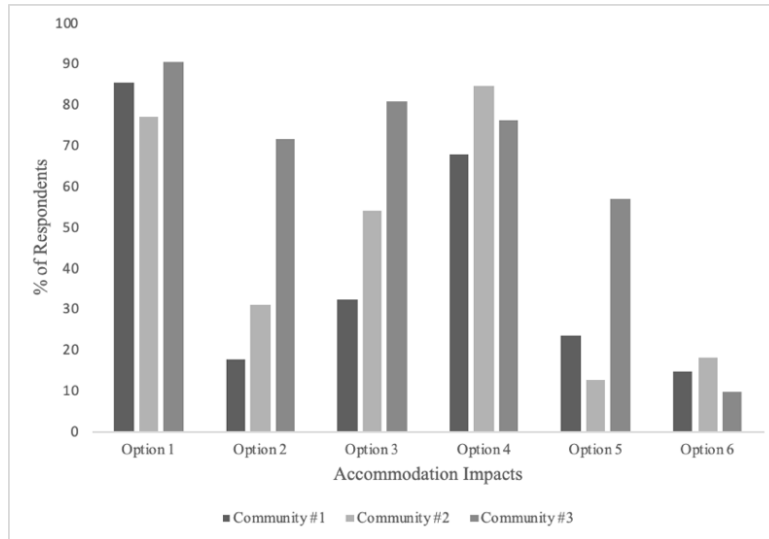


Figure 5.1. Community members across communities overall have a positive attitude towards ecotourism accommodations and the services they provide. Survey respondents were asked to select all the ways in which present ecotourism accommodations were impacting their community from a predetermined list of six impacts, with Option 6 being the only option that was negative. Responses for each community were calculated separately and are reported in terms of percentages of total responses for each community (Community #1: n=34, Community #2: n=39, and Community #3: n=21). Option 1 – Provides jobs, Option 2 – Improves community infrastructure, Option 3 – Aids community development, Option 4 – Creates/Expands markets, Option 5 – Creates education or community service programs, Option 6 – Negatively impacts the community socioeconomically.

DISCUSSION

While there are clear similarities between these three surveyed communities, there is also some interesting differences, particularly relating to household income.

When examining household income, prior studies on ecotourism state that ecotourism has the potential to raise household income across the community (Das & Hussain, 2016; Muhanna, 2007). My findings support these claims with a majority of community members across all three communities reporting an increase in income over the previous decade. While it is difficult to fully attribute these increases in income to ecotourism alone since the survey did not collect the level of detail needed to support such a strong claim, the presence of ecotourism and accommodations has definitely

contributed to these increases in income, at least partially. This is supported by the accommodation industry, and the other economic sectors that relate to accommodations and tourism such as restaurants, making up a large portion of the job market in each of the three communities surveyed.

Beyond this, many community members viewed the ecotourism accommodations in their communities positively and explicitly stated that accommodations provided employment opportunities and helped to either expand already existing industries in the community or create new opportunities (such as opening souvenir shops or shops for local goods). These attributions to the existence of ecotourism accommodations in the community all help support my claim that the presence of ecotourism in these communities has helped each community develop economically.

While most community members overall reported increases in income, there were several community members that reported decreases in income or the loss of a livelihood over the same time period. While these instances were few, it is important to discuss them and the implications that these decreases in income represent.

In general, those households that reported decreases in household income and did not attribute these decreases due to voluntary reasons or retirement were often involved in the agriculture, livestock, or forestry industries. This suggests that while ecotourism has overall benefitted the community, there does exist some community members that were hurt by the growth of this industry, as it represents a departure from traditional livelihoods that some community members depended on entirely. Instances of this do exist when examining the literature (Kiper et al. 2011), and while my results do also support these claims that ecotourism has the potential to negatively impact some

community members (Johnson, 2010), my findings that a majority of community members were better off after ecotourism began suggests that for at least the three communities studied, the benefits outweigh the costs.

In addition to some community members being reporting a loss of income, there was also instances in communities where survey results demonstrated that an unequal distribution of wealth in the community exists. Wealth inequality is often viewed as a negative impact of ecotourism without consideration for the income of community members pre-ecotourism (Holden et al. 2011; Ma and Wen, 2016). While an unequal distribution of wealth is certainly not a positive impact of ecotourism, with all communities overall reporting an increase in income over the previous decade, this suggests that in general, households in these communities are better off than they once were. In other words, even with the existence of wealth inequality, most households in these communities are making more than they were prior to ecotourism developing.

With this said, even with most households earning more when compared to a decade ago, it may also be true that the income gap between households has become larger with the growth of ecotourism. My survey did not ask the questions necessary in order to best determine how the income gap between households has changed over time. It is not unreasonable, however, to imagine that households that had highly educated members or households that were already at higher income levels pre-ecotourism had a higher capability to capture the benefits of ecotourism, suggesting that the income gap may have increased over time.

Diving deeper into the existence of wealth inequality in some of these communities, Community #1 provides an example of a community in which households

that have members that work for an ecotourism accommodation (regardless of accommodation certification status) reported a higher household income when compared to households that did not have at least one member working for an ecotourism accommodation. This finding suggests that ecotourism accommodations in Community #1 may have provided the opportunity for certain households to earn more than others, creating the phenomenon where direct participants in the ecotourism industry are gaining a higher portion of the benefits of ecotourism than those community members that are either indirectly or not involved with the industry at all.

While Community #1 demonstrated that accommodation employees (regardless of accommodation certification status) were capturing a larger portion of ecotourism's benefits, Community #2 provided a different example of unequal wealth distribution. In Community #2, households that had members working for accommodations did not make significantly more/less money than households that did not work for accommodations. Exploring the data further on this topic, it became clear that Community #2 was unique in that there were many households that were business owners, with several of these business owners being the owners of the land with the main tourist attractions in the area, waterfalls. These households were often entirely dedicated to operating the family's business, so none of these households had members that worked for accommodations. These business owners often reported a higher, or at least equivalent, household income to those households with accommodation staff, eliminating any income differential between households.

However, when solely examining households that had members working for accommodations in Community #2, results found that households with members working

for certified accommodations reported a higher household income than households that had members working only for uncertified accommodations. This finding suggests that the certified accommodation in Community #2 potentially offered higher wages to its employees when compared to the uncertified accommodations in the community, creating an unequal distribution of wealth between households that had members working for certified versus uncertified accommodations, with those working for certified accommodations reaping more of the benefits from ecotourism.

This represents a different source of wealth inequality than the one found in Community #1, but one that is not surprising when considering my findings in Chapter 4. In Chapter 4, I found that certified accommodations tended to be those that had the capability to apply for certification, meaning that they were often larger and more expensive. Considering these characteristics, it is not hard to believe that in many cases, these certified accommodations also have the ability to pay higher wages to their employees. Perhaps what is surprising about my findings here is that in only one of three studied communities it was found that certified accommodations were potentially leading to a higher household income.

Community #1 and Community #2 provide examples of ways in which ecotourism can contribute to or exacerbate wealth inequality in communities. While work can be done in order to better allocate resources to community members, most community members were not only better off with ecotourism present, but also viewed ecotourism and accommodations positively. This suggests that overall, ecotourism was a welcome addition to the community and members understand the value that it adds. While not studied here, it would be very insightful for a future study to compare the

household income of these communities to other communities in similar areas that do not have ecotourism. Findings from a study as such may demonstrate that these ecotourism communities are making more when compared to other rural communities, which would be an example wealth inequality on a different geographic scale.

Transitioning to an analysis of household assets owned, the general consensus across communities was that as household income increases, so does the number of possessions. This finding is not surprising. Something that was interesting was that regardless of community, a reported household income of > ₱4,000,000 seemed to denote an increase in total asset value. This may mean that ₱4,000,000 may represent some type of threshold in these rural communities, where above this level, households have a certain amount of disposable income that allows them to feel more comfortable spending income on material possessions that are not considered a necessity.

When examining assets owned based on if a household had members working for an accommodation or not, I found that households with accommodation workers were significantly more likely to own a vehicle, whether that be a car or motorcycle (the latter being the preferred and most common mode of transportation observed). While this may relate to income to some degree, with most households across communities that contained accommodation employees reporting incomes that were in the middle to upper tiers, I believe this to be much more related to the necessity of reliable transportation. In each of these three communities, the ecotourism accommodations were often not within the community itself but were instead several miles away. Because of this distance between the community and its associated ecotourism accommodations and the lack of public transportation in these areas or accommodation provided transportation (i.e.

accommodation shuttle), accommodation employees needed to have reliable transportation to get to and from their place of work. This fact alone is reason enough, regardless of income level, for households with accommodation workers to emphasize transportation and own a higher number of vehicles, particularly if there were multiple accommodation employees in a single household.

Lastly, in terms of the impacts of ecotourism accommodations and certification on the economic development of each community, my results show that each community generally reported an increase in available job opportunities. This can either be viewed through the creation of jobs directly caused by the presence of ecotourism accommodations in these communities, or indirectly by expanding or creating new markets through the presence of these accommodations and the tourists they bring to these communities. In these communities these indirect benefits for job opportunities were particularly seen in the creation of souvenir shops selling tourist merchandise and local goods, in the restaurant industry, or in the need for tour/nature guides. The few respondents that reported a decrease in job opportunities were the same as those who reported a decrease in household income. These households were often involved and dependent on agriculture or forestry, two livelihoods that each of these communities once depended on but have slowly transitioned away from as ecotourism as gained traction and community members have realized the importance of the ecotourism industry to their current livelihoods.

Moving away from the impacts of ecotourism accommodations and certification on the economic development of the community, my results show that each of these communities in general reported an increase in population, roughly no change in ethnic

diversity, and while not a high percentage in any community said it had increased, a probable increase in crime rates. Examining each of these further, any increases in population were often attributed to the communities expanding the ecotourism industry. Most community members understood the importance of ecotourism to the economic development of their community, and also were well aware that most immigrants were moving to partake in this development, either by participating directly in the industry or indirectly, by working for an industry that ecotourism depends on. When looking at surveys of households that had moved to each community within the previous decade, it was almost always the case that the household contained members that worked for one of the accommodations within the community, providing evidence that community members were correct in their assumption that most new members were present to participate in the ecotourism industry.

In terms of ethnic diversity, only Community #2 had any reports of increases in ethnic diversity, and even in this community reports of increases in diversity were only a small percentage of surveys. This might be viewed as an interesting finding when considering that each community reported on increase in population over the past decade. However, when talking with respondents, ethnic diversity was very often viewed as representing people who were not Costa Rican. With this in mind, almost all new immigrants to these communities were still Costa Rican and therefore were not considered as increasing the ethnic diversity of the community, regardless of the race of these immigrants.

For crime, the literature suggests that ecotourism may lead to increases in crime for a plethora of reasons, including but not limited to an influx of foreigners or the

immigration of people to these areas to participate in these industries (Andereck et al. 2005). When looking at my results for each community, there were some reports of crime increases in each community, however no community was statistically significant from the others, which suggests that any increases in crime were generally the same in each community.

Community #1 connected increases in crime to increases in the illegal drug trade. However, the drug trade was never associated with the presence of ecotourism, but was instead attributed to their proximity to the Nicaraguan border. In Community #2 there were reports of increased crime, and several of these reported increases were attributed to the immigration of people to the community. This increased crime may be linked to ecotourism since many of these immigrants were present solely to participate in the ecotourism industry, but no respondents linked this increase in crime to ecotourism directly. In other words, while respondents in Community #2 did report an increase in crime and attributed it to a specific group of people (whether this is in fact true or not is not explored here), no respondent blamed the presence of ecotourism as the catalyst for this increase in crime. Lastly, for Community #3, while increases in crime were reported, unfortunately no respondents stated reasons for this increase in crime or details into what type of crime was occurring. Regardless, with each community reporting some level of increase in crime, it may very well be that crime has increased within these communities over the past decade. This however may not be due to ecotourism directly but instead as something that inevitably occurs as community populations increase, a byproduct of ecotourism.

Assessing the relationship that exists between accommodations and the community, while Chapter 4 analyzes this relationship from the perspective of the accommodations, this chapter examines this relationship from the eyes of the community members. This is necessary in order to develop a full picture of how accommodations are impacting these communities and to draw comparisons between what accommodations state they are doing and what they are actually doing (through the community members). This survey accomplished that by asking each respondent to articulate how accommodations have impacted their community and whether this was a positive or negative impact.

Overall, survey respondents realized the importance of ecotourism and accommodations to their livelihoods and acknowledged that the presence of ecotourism and these accommodations have created more opportunities in these communities for advancement and development. The majority of respondents across communities very quickly attributed increases in job opportunities to accommodations and also related the existence of these accommodations to the expansion of other industries within the communities. While not seen in Communities #1 and #2, Community #3 respondents also attributed advancements in community infrastructure and the creation of better education/community programs to accommodations as well. While a very interesting finding, this may be due to Community #3 having many more accommodations when compared to Communities #1 and #2 and the fact that there were more certified accommodations in Community #3. With the presence of more certified accommodations, or just more accommodations in general, this increases the opportunity for accommodations to better contribute to the community, and these accommodations

can essentially work together to provide a range of services, rather than in Communities #1 and #2 where all service provision falls on the shoulders of a few small hotels with limited capability.

While not many respondents chose that accommodations were negatively impacting the community, those that did should not be ignored. These respondents and their explanation of how accommodations have negatively impacted the community were often related to the unequal distribution of wealth observed in the community and explained above, or the loss of jobs in alternative livelihoods. Starting with the unequal distribution of wealth, it must be stated that these households that reported this as a negative consequence often reported that their household income had increased over the previous decade. This suggests that even though these households may not have gained as much of the benefits as others, which is why these respondents stated the unequal wealth as an impact, they still are reaping some of the benefits of ecotourism.

In regards to the loss of jobs, this can be taken in two ways. First, with ecotourism gaining traction, these communities have slowly transitioned away from agriculture and forestry, their traditional livelihoods. Respondents that stated this as a negative consequence of the existence of ecotourism accommodations gave two primary reasons as to why they believed this to be negative. First, this meant a reduction of jobs in these industries, with many of these respondents depending on these industries for their income. Second, some respondents saw this transition as a departure from their traditional way of life, or essentially the loss of the traditional community culture.

While these are definitely valid negative impacts of ecotourism, it only helps demonstrate the complexity of community development and the role that ecotourism

plays in this process. It is difficult, as the survey demonstrates, to ensure that most stakeholders in these communities fully realize and reap the benefits of ecotourism, and a byproduct of ecotourism will almost always be the transition away from some other livelihood. However, the three communities studied here do demonstrate that while not all community members can or will be satisfied with this transition, ecotourism, if done correctly, has the ability to improve the lives of most while limiting the negative consequences that are often associated with ecotourism.

This study was limited in scope due to time and budget constraints. More empirical research on the impacts of ecotourism and certification at the community level is necessary in order to truly understand how these phenomena are impacting the communities they are present in. One future study that can be done in order to build upon this study is to more explicitly study the relationships that exist between accommodations and community members. While I do that indirectly in this study and briefly touch upon it here, it would be beneficial to create an in depth understanding of ecotourism accommodations from the perspective of community members to better understand what accommodations do well, what can be improved upon, and also what it is that community members specifically demand or desire from these accommodations. Since ecotourism is intimately tied to these local communities, it would behoove all parties involved to better understand how a symbiotic relationship can best be achieved between accommodations and these local communities.

Furthermore, this study focuses entirely on three Costa Rican communities, all of which are ecotourism destinations. A future study can either survey other ecotourism communities and compare results, or non-ecotourism communities can be surveyed and

compared to these communities. This second suggestion is particularly interesting in that surveying non-ecotourism communities will create the opportunity to truly compare how ecotourism has impacted communities and the country overall. If findings suggest that non-ecotourism communities have essentially been left behind in the larger development plans for these developing nations, this identifies a much larger problem, one that is not necessarily the fault of ecotourism itself, but of the parties and governments that are implementing these plans.

CONCLUDING REMARKS

In summary, this study analyzed three Costa Rican communities that were known ecotourist destinations with the hopes of identifying the impacts that ecotourism accommodations and certification have had on these communities over time. While differences did exist between communities, particularly in regards to the distribution of wealth, this study finds that overall, each of these three communities has developed successfully and sustainably by using ecotourism as a development tool.

In each community, a majority of survey respondents reported positive impacts of ecotourism and accommodations with limited reporting of negative consequences. While these reports of negative impacts cannot be ignored and suggest that there is still work to be done to ensure most community members support the ecotourism industry and realize its benefits, I find that ecotourism, at least in these three communities, has created opportunities for members of these communities to advance and better provide for themselves and their households.

Certification did impact communities, particularly in Community #2, where it was found that certified accommodations likely pay higher wages than uncertified

accommodations. Since I only study three communities here, the concept of certification and the impacts that certification itself can have on communities must be further explored. If this is not a unique case, and other communities follow a similar pattern, then while ecotourism may be benefitting communities at inception, work must be done to ensure that certification does not ultimately lead to the undoing of these benefits.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

LOOKING BEHIND

While prior literature on ecotourism is extensive, doubts still exist on the efficacy of ecotourism in creating the conditions necessary to allow sustainable socioeconomic development of local communities while also conserving the surrounding natural environment (Blackman et al. 2014). In part, because of these doubts, the ecotourism industry has supported the creation of ecotourism certification programs to assess ecotourism operators and identify those that best represent the tenets of ecotourism (Karlsson and Dolnicar, 2016; Donohoe and Needham, 2006). By recognizing the operators that are the “best” in the industry, industry experts hope that this will help minimize greenwashing within the ecotourism industry while also inspiring non-certified operators to improve their practices in hopes of becoming certified in the future (Chamorro and Banegil, 2006). These claims have not been substantiated through empirical research.

Research has just begun to explore ecotourism certification programs (Esparon et al. 2014). Few studies on the topic exist, and those that do often study the consumer and operator perceptions of such programs (Esparon et al. 2013; Rowe and Higham, 2007). While this is a necessary component, in order to truly support certification as an effective assessment tool, more studies are needed. Particularly, studies must be completed that not only aim to better understand ecotourism certification programs as they exist today, but research must also assess the outcomes of these programs. In terms of outcomes, I am referring to the outcomes of certification for certified/non-certified ecotourism

businesses, and the outcomes/impacts of ecotourism certification itself on the local communities where ecotourism is present, the group of stakeholders that should theoretically benefit most from the presence of ecotourism. These studies will allow us to not only understand if certification's claims are valid and determine if certification is truly capable of identifying successful ecotourism operators, but also to better realize if certification leads to any unintended impacts on the ecotourism industry overall, on certified and uncertified ecotourism operators, and on local communities dependent on ecotourism.

SUMMARIZING MY FINDINGS

In order to help fill these existing gaps and provide a foundation that can be used to further study ecotourism certification programs in the future, I aimed to answer the following four research questions through this dissertation:

- 5) How do existing ecotourism certification programs compare in terms of evaluation criteria and assessment processes utilized?
- 6) What national-level indicators influence international tourism visitation and tourist's destination choice when specifically assessing nature tourism and ecotourism destinations?
- 7) What are the socioeconomic impacts of ecotourism accommodation certification?
- 8) Are changes in certification criteria required to address any potential shortfalls in reaching the intended goals of ecotourism certification? If yes, what changes are needed?

Beginning with Research Question #1 and reviewing the findings from these specific methods, there were two findings worth noting, both of which are related to each other. First, when it came to certification criteria used by these programs, the geographic scope of a program had a significant impact on the criteria ultimately included in assessment protocols (Chapter 2). No other program characteristic such as the monetary cost to participate in the program or whether the program was operated publicly or privately impacted the criteria used. Findings suggested that programs that operate internationally (and nationally) tend to utilize a more holistic assessment procedure, meaning that they were more likely to incorporate a blend of environmental, economic, social, and cultural criteria in their assessment of applicants (Chapter 2). While an interesting finding in its own right in that this suggests that programs with a larger geographic scope may be the programs that the industry should be promoting, it is even more important when compared to the existing literature.

In the literature, it is often stated that local-level programs, or those that focus on smaller scales, should be the programs that are promoted and supported due to their ability to tailor criteria to specific locations rather than utilizing broad sweeping standards (Medina, 2005). While my findings do not necessarily go against this argument that smaller scale programs can utilize more case-specific criteria, my findings do suggest that these smaller scale programs are not using an adequate assessment protocol when it comes to incorporating criteria spanning all potential impacts that ecotourism could have (Chapter 2). Instead, these smaller scale programs tend to focus more on the impacts on the environment rather than the socioeconomic impacts of ecotourism, a component of ecotourism which is equally important to assess when considering the overall goals of

ecotourism. My findings suggest that the ecotourism industry should look closely at these existing programs to create an overall baseline standard that programs can use when creating their own criteria, and that programs operating at the international level may be a great starting point for this much needed baseline.

Lastly, for my review of certification programs, I viewed each program with a belief that the aim of each program was to identify best practitioners while helping others become more sustainable and better contribute to community development and conservation. While an optimistic perspective, this may not be the goal of all existing certification programs, and some may have ulterior motives such as limiting regulation of ecotourism from governments or making as large a profit as possible. I do not assess the possible corruption within ecotourism certification in this study, but I do acknowledge its potential existence. It is a topic that should be further understood, and, depending on the level of corruption, must be addressed if certification is to be supported as the industry's most effective assessment tool.

For Research Question #2, while a tourist's decision-making process and ultimate destination choice have been highly studied previously (Fuchs et al. 2013; Hall et al. 2003), very little work has been done in this field that has specifically looked at ecotourism destinations and if an ecotourist's decision-making process differs from mass tourists (Gundersen et al. 2015). Within this decision-making process, I explore if ecotourism certification has any influence on ultimate destination choice, a predictor that as far as I know has never been included in these models and provides the opportunity to assess the market penetration of ecotourism certification from the tourist's perspective (Sparks et al. 2013; Rex and Baumann, 2007). In order to accomplish this, I chose to

study this longitudinally from an aggregate level and use national-level data for multiple ecotourism destinations (Drakos and Kutan, 2003). Beyond including the traditional safety and security travel risks highly reported in the literature, I chose to also include a set of environmental indicators and the presence and number of ecotourism certification programs since this study focuses on ecotourism destination and I believed that the local environment should have some impact on ultimate destination choice (Ballantyne et al. 2011; Beerli and Martin, 2004).

I found that a nation's total population, GNI per capita PPP, and number of endangered species were the strongest predictors of international tourism arrivals to these chosen ecotourism destinations (Chapter 3). Subsequent models were completed to demonstrate that traditional safety and security risks, the predictors that were often found to be critical in the mass tourism decision-making process, were not significant predictors in this instance (Chapter 3). While interesting, I am not stating that these traditional travel risks are not considered by ecotourists in their destination choice. While the literature does suggest that ecotourists may be more risk-averse when compared to other tourist types and it may be true that ecotourists may place less emphasis on the safety and security of a destination (Kim et al. 2015; Amara, 2012), what I am suggesting is that overall, the ecotourism destinations selected for this model may have already reached a certain threshold of safety and security, and any increase in safety and security above this threshold has only marginal impacts on a tourist's destination choice, if any. From this, my findings may instead suggest that overall, popular ecotourism destinations tend to already be safe and secure when compared to other destinations, which allowed for other

predictors of tourism visitation to become more prominent and realized through my analyses.

Secondary models also demonstrated that the existence of ecotourism certification programs within these destinations had no explanatory power when it came to tourism arrivals (Chapter 3). This may mean one of two things. First, that tourists do not know these programs exist, affirming the belief that certification programs have not adequately penetrated the ecotourism market (Esparon et al. 2014). Or, second, that tourists choose to not utilize these programs in their decision-making process. Regardless of which is true, this suggests that certification may not create the positive outcomes for certified ecotourism operators that it claims, particularly the increase in visitation that many certification programs publicize.

Research Question #3 was intentionally broad in that it encompasses the socioeconomic impacts of ecotourism and ecotourism certification both from the perspective of ecotourism accommodations as well as the local community members of communities that are dependent on ecotourism. From the perspective of accommodations, certification often argues that it helps increase visitation as one of its main draws for participation (Ponnareddy et al. 2017). My findings suggest that not only do certified accommodations not apply for certification because they believe it will increase business, but my findings also demonstrate that certified accommodations overall did not see different changes in visitation when compared to uncertified accommodations (Chapter 4). This again may relate to a lack of market penetration by certification programs, with few tourists utilizing them in the way intended.

Second, I also found that for Costa Rica specifically, certified accommodations were statistically larger and more expensive than their uncertified counterparts (Chapter 4). This was an important finding because it ultimately suggests that these certified properties have a higher capacity to do more in terms of community development and conservation. Regardless of certification status, I found that accommodations, at least those in Costa Rica, were all attempting to support the local community and contribute to conservation initiatives. However, those that were certified tended to be accomplishing more and were better representing ecotourism because of these additional efforts (Chapter 4). This was not necessarily because they were certified and actively chose to divert resources from other areas to focus more on ecotourism's goals, but potentially rather because they naturally had the higher capacity to do more due to their size and/or cost. I found this interesting because through my case study, it became apparent very quickly that all accommodations, regardless of certification status, understood the importance of a symbiotic relationship with the local community and the conservation of the local environment and what each of these meant for their business. From these findings, while it must be said that certified accommodations did tend to accomplish more in terms of community development and conservation and may very well be shining examples of ecotourism, it should not detract from the efforts of accommodations that are doing what they can within their abilities. Rather, my findings suggest that program reform may be needed in order to increase accessibility to certification programs and reduce any existing barriers that may prohibit ecotourism businesses from applying.

In terms of the socioeconomic impacts of ecotourism accommodations and ecotourism certification on local communities, I found that ultimately, ecotourism

accommodations were viewed positively by community members and that most households within these ecotourism-dependent communities saw an increase in household income over time, regardless of their participation in the ecotourism industry (Chapter 5). While discrepancies in terms of wealth distribution did exist across communities, with households with members working for accommodations reporting a higher income than households with no members working for accommodations in one community, and households with members working for certified accommodations reporting a higher income than households with members working solely for uncertified accommodations in a different community, overall, most households reported an increase in income over the previous decade (Chapter 5). This suggests that for these specific communities, ecotourism has potentially led to beneficial economic outcomes for most community members and can overall be viewed as a success from an economic development standpoint. One caveat to these reported increases is that my study period begins at the global recession of 2008. This means that generally, most households were most likely better off in 2018 (the end of my study period) than they were in 2008 simply because of the recovery that has occurred since this recession. However, looking at Costa Rica in general and comparing the increases reported in the study communities to those observed in Costa Rica as a whole, these study communities reported higher increases in income. This provides further evidence that ecotourism may produce benefits for a majority of community members if executed properly. While ecotourism and certification's impact on income itself can be further studied, I also suggest that the unequal distribution of wealth seen in my findings is a phenomenon that should be further

explored, especially in finding that certification may have the potential to exacerbate or create wealth inequality.

Beyond the impacts of ecotourism and certification on wealth distribution and household income, each community studied reported increases in population, job opportunities, and crime (Chapter 5). While the amount of increase varied between communities, it is interesting to see increases in each of these within the communities when considering that each community studied was a small community in rural Costa Rica with little to offer other than participating in the ecotourism industry. These increases suggest that ecotourism can be a draw for immigrants both from within the country or internationally and while not fully studied in this dissertation, this migration can potentially lead to both positive and negative impacts which should be explored further.

While overall I find that ecotourism has positively impacted these communities, there were a few community members in each studied community that reported negative consequences of ecotourism. These negative impacts revolved around the loss of traditional livelihoods that these communities once depended on, often times being agriculture, livestock, or forestry (Chapter 5). Although most households reported increases in income, which should not be forgotten or downplayed, it must also be done in a manner in which benefits all community members, or at least does not ultimately harm community members. Based on my survey results this may not be the case for these studied communities. As ecotourism develops, it should be accomplished in a way that does not detract from traditional livelihoods or does not lead to a loss of local culture and customs (if this is perceived as a negative by community members). Through my studies,

while most community members did benefit from ecotourism, and I deem it a success overall, there did exist select community members that were worse off as the community continually become more dependent on ecotourism. Because of these findings, I suggest that ecotourism operators find ways to support traditional livelihoods and take action to ensure that all community members still reliant on these livelihoods reap the benefits rather than a select few.

ECOTOURISM CERTIFICATION PROGRAM RECOMMENDATIONS

Based on my results, while there are certain ways that certification can be improved and there is no reason to argue for the removal of certification entirely, I must state that there is also no evidence that we should uphold certification as the solution to all of the current problems existing within the ecotourism industry. This is especially true when considering that certification is not required but is instead voluntary.

While certification is certainly not doing much harm to the overall industry, my findings suggest that many ecotourism accommodations are contributing to community development and conservation in the ways that they are capable. This means that certification itself is not driving ecotourism businesses to become more sustainable, but rather that these businesses are doing so because they understand their reliance on local communities and the environment. With this finding, supporting and reforming certification programs as assessment tools should not be the only method used going forward. Nor do I recommend certification as the sole tool in holding ecotourism businesses accountable.

In addition to reforming certification, what really should be done is the dissemination of publicly available information on sustainable practices and technology

to all ecotourism businesses. This is demonstrated through my research by finding that barriers to certification exist and that one of the primary benefits received through certification is the adoption of sustainable practices and a reduction in operation costs. With this information, ecotourism businesses would not be required to go through certification to become more sustainable. Instead, they would have open access to the information and tools that would allow them to better represent the ideals of ecotourism, minimizing the negative impacts of ecotourism as a byproduct.

Beyond increasing availability of information, an additional way in which the ecotourism industry can become more sustainable and limit negative impacts separate from certification is the subsidization of sustainable technology. Rather than putting resources solely into certification programs and their reform, it may be better to utilize some of these funds to subsidize certain sustainable products and technology. This would not only entice ecotourism businesses to incorporate this new technology and reduce operation costs, but it would also allow for some ecotourism businesses, particularly the smaller ones, to actually afford and implement these technological advancements.

Reverting back to certification, there are several ways that I recommend to improve programs, alleviate existing confusion amongst tourists and ecotourism businesses, and increase market penetration. Each of these would help certification become a more effective assessment tool within the ecotourism industry.

First, based on my review of certification programs in existence today, it became apparent that each program operated independently and utilized its own independent set of criteria. While not necessarily a problem, I recommend that work be done to create a baseline standard of criteria that should be included in each programs assessment

protocols. Through my work, it was identified that international-level programs were the most likely to use criteria spanning the four categories of environmental, economic, social, and cultural. From these findings, I recommend that international-level programs be further studied to determine which criteria across categories are most used in order to create this baseline standard. Beyond this, it may be beneficial to identify key programs that can be used as examples by other programs when creating or revising their used standards. In its current state, there are too many ecotourism certification programs, each using their own set of criteria. Work needs to be done to streamline these programs in order to alleviate existing confusion in tourists and tour operators. Through this process, I hope that certification will be better able to penetrate the market, both from the perspective of tourists and ecotourism operators, and truly become the assessment tool so many believe it is.

Beyond creating a baseline standard, it may also be beneficial to either better differentiate between programs or reduce the number of existing programs, though how this could be accomplished is more opaque. Starting with program differentiation, my findings demonstrated that some certification programs focus almost entirely on environmental indicators. I do not argue against this if the certification program wants to focus on the environmental specifically, but I would argue that the lack of sociocultural and economic indicators means that these programs are not necessarily ecotourism certification programs. Instead, they are environmental certification programs and should be labeled as such. This may help diminish existing confusion. Beyond differentiating between programs, the sheer number of programs suggests that we may not need all of them and that the high number may be inhibiting certification from becoming more

effective. An additional viable option to increase certification efficacy beyond assessment criteria reform may be the reduction of programs by either removing some entirely or consolidating programs together under the same label.

Second, my findings suggest that while certified accommodations did better represent the ideals of ecotourism, uncertified accommodations were also representing these same ideals, just to a lesser extent. While expected, this was not necessarily because certified accommodations actively chose to do more to contribute to conservation and community development, but perhaps because they simply had a higher capacity to do so due to their larger size and/or higher cost. This may be case specific to Costa Rica, but it is clear that a barrier exists for many accommodations in achieving certification.

Although I would never recommend lessening the assessment criteria used by programs, since there is already concerns over criteria being too low as they stand, I do recommend that work should be done to increase the accessibility of these programs.

There are several ways to achieve this, and different approaches may be needed depending on the scope of the program, but one way that each program can utilize is the dedication of staff specifically meant to help ecotourism operators with the application process. An additional method would be to subsidize certification programs. Each of these suggestions may be difficult for some programs, especially those that operate on smaller scales and have smaller budgets and limited resources, but it is a uniform recommendation that can be applied across certification programs and can alleviate some of the pressure placed on ecotourism operators without reducing the assessment criteria standards. By removing this barrier to certification, it will hopefully allow for more

ecotourism operators to participate, which would also help certification achieve its goals of identifying the best ecotourism operators and reducing greenwashing in the industry.

LOOKING AHEAD

This dissertation provides a preliminary and broad study that addresses the existing gaps in the literature regarding ecotourism certification programs and its impacts. Future work can be done that builds upon these findings in several ways.

For the certification program comparison that I completed, it was primarily intended to provide a broad overview of currently existing certification programs and better understand the characteristics of these existing programs, something that is not currently available. Through this, my completed analyses are very broad in nature and I do not look at programs in great depth. A future study can be done that further examines the criteria used by programs to identify those that are used most. From this study, a baseline standard can be created that can then be adopted by programs worldwide. This baseline standard does not need to be concrete, but rather suggestive and flexible in that it allows programs to tailor each criterion to its specific environment, both socioeconomically and environmentally. This future study corresponds with my first recommendation in regards to how to improve the certification industry overall.

In addition to better understanding the criteria programs use, it may also be worth studying each program and their relationships/partnerships with local governments, NGOs, and ecotourism companies/businesses. If corruption is a problem within certification, this is one way to identify this corruption and any ulterior motives that certification programs may have.

For the impacts of certification on accommodations and communities, much more work is needed. I specifically study the impacts of certification on accommodations and communities within Costa Rica. While an insightful case study, a future study can utilize these same methods and protocols and apply them to other case studies. This will allow for a comparison of certification programs to be completed and determine if the impacts seen in my findings align with other certification programs around the world.

Beyond this, future studies can be completed that focus on one particular aspect of this study in order to formulate a much more comprehensive understanding of that particular topic. One example being the impacts of certification on household income. While I address household income and its changes over time as part of the overall study, a future project can focus entirely on this phenomenon and collect much more detailed information than what is presented here. Through a study such as this, we can more confidently tease apart the impacts of certification itself from the impacts of ecotourism and formulate an idea of underlying community or ecotourism characteristics that may lead to these impacts of certification.

Lastly, I study the impacts of ecotourism and certification through a socioeconomic lens in this dissertation. It is vital that we also work to understand the environmental impacts that ecotourism and certification have. Only with this information can we truly develop a full image of the impacts of certification and begin developing ideas of how all of these impacts are connected to each other. Based on the findings from my household survey that most community members recognized the importance of ecotourism to their community as well as the increase in population that also resulted, it is clear that there are definite impacts of ecotourism on the local environment, both

positive and negative and direct and indirect. What is not so clear is how certification may alter these impacts. Only with this environmental component can we truly determine if ecotourism certification programs are capable of accomplishing their stated goals.

REFERENCES

- Adams, W., R. Aveling, D. Brockington, B. Dickson, J. Elliot, J. Hutton, and W. Wolmer. (2004). Biodiversity conservation and the eradication of poverty. *Science*, 306, 1146-1149.
- Aguilar, F. and R. Vlosky. (2007). Consumer willingness to pay price premiums for environmentally certified wood products in the U.S. *Forest Policy and Economics*, 9, 1100-1112.
- Ahebwa, W., R. van der Duim, and C. Sandbrook. (2012). Tourism revenue sharing policy at Bwindi Impenetrable National Park, Uganda: A policy arrangements approach. *Journal of Sustainable Tourism*, 20, 377-394.
- Akama, J. and D. Keiti. (2003). Measuring tourist satisfaction with Kenya's wildlife safari: a case study of Tsavo West National Park. *Tourism Management*, 24, 73-81.
- Alin, A. (2010). Multicollinearity. *WIREs Computational Statistics*, 2, 370-374.
- Almeida Garcia, F., A. Balbuena Vazquez, R.C. Macias. (2015). Resident's attitudes towards the impacts of tourism. *Tourism Management Perspectives*, 13, 33-40.
- Alonso, A.D. and A. Ogle. (2010). Tourism and hospitality small and medium enterprises and environmental sustainability. *Management Research Review*, 33, 818-826.
- Amalu, T., E. Duluora, O. Otop, V. Omeje, and S. Emeana. (2017). Assessment of tourists' patronage of Obudu mountain resort, Cross River state, Nigeria. *Journal of Hospitality and Management Tourism*, 8, 32-41.
- Amalu, T., O. Otop, E. Duluora, V. Omeje, and S. Emeana. (2018). Socio-economic impacts of ecotourism attractions in Enugu state, Nigeria. *GeoJournal*, 83, 1257-1269.
- Amara, D. (2012). *Tourists' risk aversion and willingness to take risks: the case of tourists visiting Egypt after 25th January revolution*. 6th World Conference for Graduate Research in Tourism, Hospitality, and Leisure, 22: Fethiye, Routledge.
- Amati, C. (2013). "We all voted for it": Experiences of participation in community-based ecotourism from the foothills of Mt Kilimanjaro. *Journal of Eastern African Studies*, 7, 650- 670.
- Andereck, K., K. Valentine, R. Knopf, and C. Vogt. (2005). *Residents' perceptions of community tourism impacts*. *Annals of Tourism Research*, 32, 1056-1076.

- Anderson, C. (2010). Presenting and Evaluating Qualitative Research. *American Journal of Pharmaceutical Education*, 74, 1-7.
- Arnegger, J., M. Woltering, and H. Job. (2010). Toward a product-based typology for nature-based tourism: A conceptual framework. *Journal of Sustainable Tourism*, 18, 915-928.
- Ashley, C. and B. Jones. (2001). Joint ventures between communities and tourism investors: Experiences in southern Africa. *International Journal of Tourism Research*, 3, 407-423.
- Audirac, I. (1997). *Rural Sustainable Development in America*. New York: John Wiley.
- Ayuso, S. (2006). Adoption of voluntary environmental tools for sustainable tourism: Analysing the experience of Spanish hotels. *Corporate Social Responsibility and Environmental Management*, 13, 207-220.
- Ayuso, S. (2007). Comparing voluntary policy instruments for sustainable tourism: the experience of the Spanish hotel sector. *Journal of Sustainable Tourism*, 15, 144-159.
- Baku, A. (2013). *The Different Types of Tourism*. Albania: Baku Group.
- Ballantyne, R. J. Packer, and J. Falk. (2011). Visitors' learning for environmental sustainability: Testing short- and long-term impacts of wildlife tourism experiences using structural equation modeling. *Tourism Management*, 32, 1243-1252.
- Balmford, A., J. Green, M. Anderson, J. Beresford, C. Huang, R. Naidoo, M. Walpole, and A. Manica. (2015). Walk on the Wild Side: Estimating the Global Magnitude of Visits to Protected Areas. *PLoS Biology*, 13, 1-6.
- Bansal, H. and H. Eiselt. (2003). Exploratory research of tourist motivations and planning. *Tourism Management*, 25, 387-396.
- Basala, S. and D. Klenosky. (2001). Travel-Style Preferences for Visiting a Novel Destination: A Conjoint Investigation across the Novelty-Familiarity Continuum. *Journal of Travel Research*, 40, 172-182.
- Becken, S. and J. Hay. (2007). *Tourism and climate change: Risks and opportunities*. Channel View Publications.
- Beerli, A. and J. Martin. (2004). Tourists' characteristics and the perceived image of tourist destinations: A quantitative analysis – a case study of Lanzarote, Spain. *Tourism Management*, 25, 623-636.

- Beh, A. and B.L. Bruyere. (2007). Segmentation by visitor motivation in three Kenyan national reserves. *Tourism Management*, 28, 1464-1471.
- Bekk, M., M. Sporrle, and J. Kruse. (2015). The benefits of similarity between tourist and destination personality. *Journal of Travel Research*, 55, 1008-1021.
- Bello, F.G., N. Carr, B. Lovelock, and F. Xu. (2017). Local residents' perceptions of socio-cultural impacts of tourism in Mangochi, Malawi. *Advances in Hospitality and Tourism Research*, 5, 1-22.
- Bentley, T., S. Page, D. Meyer, D. Chalmers, and I. Laird. (2001). How safe is adventure tourism in New Zealand? An exploratory analysis. *Applied Ergonomics*, 32, 327-338.
- Bergin-Seers, S. and J. Mair. (2009). Emerging green tourists in Australia: Their behaviours and attitudes. *Tourism and Hospitality Research*, 9, 109-119.
- Bhattacharya, D., B. Chowdhury, and R. Sarkar. (2011). *Irresponsible Ecotourism Practices Flanking The Best National Park In India: A Multivariate Analysis*. 2nd International Conference On Business And Economic Research Proceeding, 1901- 1928.
- Bien, A. (2002). Environmental certification for tourism in Central America: CST and other programs. In M. Honey (Ed.), *Ecotourism and certifications. Principles in practice*. Wallingford: CAB International.
- Bien, A. (2005). *Marketing strategy for sustainable and ecotourism certification, EcoCurrents first quarter 2005*. Washington, DC: The International Ecotourism Society.
- Bien, A. (2008). *A Simple User's Guide to Certification for Sustainable Tourism and Ecotourism*. Global Sustainable Tourism Council.
- Bjork, P. (2000). Ecotourism from a Conceptual Perspective, an Extended Definition of a Unique Tourism Form. *International Journal of Tourism Research*, 2, 189-202.
- Black, R. and A. Crabtree. (2007). *Quality Assurance and Certification in Ecotourism*. The International Ecotourism Society. Wallingford: CAB International.
- Blackman, A., M.A. Naranjo, J. Robalino, F. Alpizar, and J. Rivera. (2014). Does tourism eco-certification pay? Costa Rica's Blue Flag Program. *World Development*, 58, 41-52.
- Blamey, R.K. (2001). Principles of Ecotourism. In D. B. Weaver (Ed.), *Encyclopedia of Ecotourism*. New York: CAB International.

- Bonera, M. (2008). *The vacation decision making process: tourism in the Garda Lake*. 8th Global Conference on Business and Economics, Florence, Italy.
- Boo, E. (1993). *World Wildlife Fund's Involvement in Ecotourism Projects*. 10th General Assembly, Bali, Indonesia, 30 September-9 October. Round Table on Planning for Sustainable Tourism Development. World Tourism Organization.
- Bookbinder, M., E. Dinerstein, A. Rijal, H. Cauley, and A. Rajouria. (1998). Ecotourism's support of biodiversity conservation. *Conservation Biology*, 12, 1399-1404.
- Bowman, K.S. (2011). Sustainable tourism certification and state capacity: keep it local, simple, and fuzzy. *International Journal of Culture, Tourism, and Hospitality Research*, 5, 269-281.
- Brandt, J. and R. Buckley. (2018). A global systematic review of empirical evidence of ecotourism impacts on forests in biodiversity hotspots. *Current Opinion in Environmental Sustainability*, 32, 112-118.
- Braun, Y., M. Dreiling, M. Eddy, and D. Dominguez. (2015). Up against the wall: ecotourism, development, and social justice in Costa Rica. *Journal of Global Ethics*, 11, 351-365.
- Brinkerhoff, D. (1996). Coordination issues in policy implementation networks: an illustration from Madagascar's environmental action plan. *World Development*, 24, 1497-1510.
- Buckley, R. (2002a). Tourism Ecocertification in the International Year of Ecotourism. *Journal of Ecotourism*, 1, 197-203.
- Buckley, R. (2002b). Tourism Ecolabels. *Annals of Tourism Research*, 29, 183-208.
- Buckley, R. (2009). Evaluating the net effects of ecotourism on the environment: a framework, first assessment and future research. *Journal of Sustainable Tourism*, 17, 643-672.
- Buckley, R. (1998). Improving the Quality of EIA. In A. Porter and J. Fittipaldi (Eds.), *Environmental Methods Review: Retooling impact assessment for the New Century*. AEPI.
- Butarbutar, R.R. and S. Soemarno. (2012). Community Empowerment Efforts in Sustainable Ecotourism Management in North Sulawesi, Indonesia. *Indonesian Journal of Environment and Sustainable Development*, 3, 1-7.

- Butcher, J. (2006). The United Nations International Year of Ecotourism: A critical analysis of development implications. *Progress in Development Studies*, 6, 146–156.
- Campbell, L.M. (1999). Ecotourism in rural developing communities. *Annals of Tourism Research*, 26, 534-553.
- Caro, L. and J. Garcia. (2009). Does ISO 9000 certification affect consumer perceptions of the service provider? *Managing Service Quality*, 19, 140-161.
- Cater, E. and B. Goodall. (1992). *Must tourism destroy its resource base? Environmental Issues in the 1990s*. Chichester: John Wiley and Sons.
- Ceballos-Lascurain, H. (1987). The future of ecotourism. *Mexico Journal*, 13-14.
- Ceballos-Lascurain, H. (1991). Tourism, ecotourism, and protected areas. *Parks*, 2, 31-35.
- Central American Data. (2016). *Hotel Market Statistics in Costa Rica*. Retrieved from <https://www.centralamericadata.com>.
- Chafe, Z. (2007). Consumer demand for quality in ecotourism. In R. Black and A. Crabtree (Eds.) *Quality assurance and certification in ecotourism*. Wallingford: CAB International.
- Chamorro, A. and T. Banegil. (2006). Green marketing philosophy: A study of Spanish firms with ecolabels. *Corporate Social Responsibility and Environmental Management*, 13, 11-24.
- Charnley, S. (2005). From Nature Tourism to Ecotourism? The case of the Ngorongoro Conservation Area, Tanzania. *Human Organization*, 64, 75-88.
- Chatterjee, S., A. Hadi, and B. Price. (2000). *Regression analysis by example*. New York: John Wiley and Sons.
- Chen, Y. and C. Ching-Hsun. (2013). Greenwash and green trust: the mediation effects of green consumer confusion and green perceived risk. *Journal of Business Ethics*, 114, 489-500.
- Cheung, L. and L. Fok. (2014). Assessing the role of ecotourism training in changing participants' pro-environmental knowledge, attitude and behaviour. *Asia Pacific Journal of Tourism Research*, 19, 645-661.

- Chirenje, I. (2017). Contribution of ecotourism to poverty alleviation in Nyanga Zimbabwe. *Chinese Journal of Population Resources and Environment*, 15, 87-92.
- Chiu, S. (2008). Tourism and crime. *Police Science Bimonthly*, 39, 67-81.
- Clayton, N. (2017). *The Pros and Cons of Ecotourism*. Retrieved from <https://www.worldtrips.com/blog>.
- Cole, S. (2006). Information and Empowerment: The Keys to Achieving Sustainable Tourism. *Journal of Sustainable Tourism*, 14, 629-644.
- Collins, A. (1996). *The Limits of Tourism as an Engine of Sustainable Development*. Department of Economics, University of Portsmouth, Portsmouth, UK.
- Cooper, C., J. Fletcher, A. Fyall, D. Gilbert, and S. Wanhill. (2008). *Tourism: Principles and practice*. Harlow: Financial Times Prentice Hall.
- Correia, A., M. Kozak, and J. Ferradeira. (2011). Impact of culture on tourist decision-making styles. *International Journal of Tourism Research*, 13, 433-446.
- Costa Rica Tourism Institute (ICT). (2017). *Divisas por concepto de turismo 2016*. Retrieved from <https://www.ict.go.cr>.
- Costa Rica Tourism Institute (ICT). (2018). *International tourism revenue in Costa Rica from 2005 to 2017*. Retrieved from <https://www.ict.go.cr>.
- CREST (Center for Responsible Travel). (2015). *The Case for Responsible Travel: Trends and Statistics 2015*. Retrieved from <https://www.responsibletravel.org>.
- CREST (Center for Responsible Travel). (2018). *The Case for Responsible Travel: Trends and Statistics 2018*. Retrieved from <https://www.responsibletravel.org>.
- CREST (Center for Responsible Travel). (2019). *The Case for Responsible Travel: Trends and Statistics 2019*. Retrieved from <https://www.responsibletravel.org>.
- Crossette, B. (1998). *Surprises in the Global Tourism Boom*. New York Times.
- CST (Certificate for Sustainable Tourism). (2016). *What is CST?* Retrieved from <https://www.ict.go.cr>.
- CST (Certificate for Sustainable Tourism). (2018). *Costa Rican Tourism Institute – CST Standard 2.0*. Retrieved from <https://www.ict.go.cr>.

- CST (Certificate for Sustainable Tourism). (2020a). *What is CST?* Retrieved from <https://www.ict.go.cr>.
- CST (Certificate for Sustainable Tourism). (2020b). *Certified Companies – Lodging*. Retrieved from <https://www.ict.go.cr>.
- D'Angela, F. and F.M. Go. (2009). Tale of two cities' collaborative tourism marketing: Towards a theory of destination stakeholder assessment. *Tourism Management*, 30, 429-440.
- Dangi, T.B. and T. Jamal. (2016). An Integrated Approach to “Sustainable Community-based Tourism”. *Sustainability*, 8, 1-32.
- Darnall, N. and S. Sides. (2008). Assessing the performance of voluntary environmental programs: Does certification matter? *Policy Studies*, 36, 95-117.
- Das, D. and I. Hussain. (2016). Does ecotourism affect economic welfare? Evidence from Kaziranga National Park, India. *Journal of Ecotourism*, 15, 241–260.
- Davis, G. (1997). How green the label? *Forum for Applied Research and Public Policy*, 12, 137-140.
- Denman, R. (2010). *Tourism sustainability council accreditation manual: a guide to the accreditation of sustainable tourism certification programs*. Report to the Global Sustainable Tourism Council.
- DESTINET (Knowledge Networking Portal for Sustainable and Responsible Tourism). 2019. *Certificates, Labels, and Standards*. Retrieved from <https://destinet.eu>.
- Devine, A. and F. Devine. (2011). Planning and developing tourism within a public sector quagmire: lessons from and for small countries. *Tourism Management*, 32, 1253-1261.
- Diamantis, D. (1999). The concept of ecotourism: evolution and trends. *Current Issues in Tourism*, 2, 93-122.
- Diamantis, D. and J. Westlake. (2001). Ecolabelling in the Context of Sustainable Tourism and Ecotourism. In X. Font and R. Buckley (Eds.) *Tourism Ecolabelling*. Wallingford: CAB International.
- DID (Department for International Development, London). (1999). *Tourism and poverty elimination*. Report by Deloitte and Touche, the International Institute for Environment and Development, and the Overseas Development Institute.

- Diedrich, A. and E. Garcia. (2009). Local perceptions of tourism as local indicators of destination decline. *Tourism Management*, 30, 512-521.
- Dimanche, F. and A. Lepetic. (1999). New Orleans Tourism and Crime: A Case Study. *Journal of Travel Research*, 38, 19-23.
- Dodds, R. and M. Joppe. (2005). *CSR in the tourism industry? The status of and potential for certification, codes of conduct, and guidelines*. CSR Foreign Investment Advisory Service Investment Climate Department.
- Dolnicar, S. (2005). Understanding Barriers to Leisure Travel: Tourist Fears as a Marketing Basis. *Journal of Vacation Marketing*, 11, 197-208.
- Donohoe, H. and R. Needham. (2006). Ecotourism: The Evolving Contemporary Definition. *Journal of Ecotourism*, 5, 192-210.
- Donohoe, H. and R. Needham. (2008). Internet-based ecotourism marketing: Evaluating Canadian sensitivity to ecotourism tenets. *Journal of Ecotourism*, 7, 15-43.
- Dowling, G. and R. Staelin. (1994). A Model of Perceived Risk and Intended Risk-Handling Activity. *Journal of Consumer Research*, 21, 119.
- Dowling, R. and D. Fennell. (2003). The context of ecotourism policy and planning. In D. Fennell and R. Dowling (Eds.) *Ecotourism Policy and Planning*. Oxon: CAB International.
- Drakos, K. and A. Kutun. (2003). Regional Effects of Terrorism on Tourism in Three Mediterranean Countries. *Journal of Conflict Resolution*, 47, 621-641.
- Dyer, P., D. Gursoy, B. Sharma, and J. Carter. (2007). Structural modeling of resident perceptions of tourism and associated development on the Sunshine Coast, Australia. *Tourism Management*, 28, 409-422.
- Edward Taylor, J., G. Dyer, M. Stewart, A. Yunez-Naude, and S. Ardila. (2003). The Economics of Ecotourism: A Galapagos Islands Economy-Wide Perspective. *Economic Development and Cultural Change*, 51, 977-997.
- Epler Wood, M. and E. Halpenny. (2001). Ecotourism certification and evaluation: Progress and prospects. In X. Font and R. Buckley (Eds.) *Tourism Ecolabelling*. Wallingford: CAB International.
- Eshun, G. and J.N. Tonto. (2014). Community-based ecotourism: Its socio-economic impacts at Boabeng-Fiema Monkey Sanctuary, Ghana. *Bulletin of Geography*, 26, 67-81.

- Esparon, M., E. Gyuris, and N. Stoeckl. (2014). Does ECO certification deliver benefits? An empirical investigation of visitors' perceptions of the importance of ECO certification's attributes and of operators' performance. *Journal of Sustainable Tourism*, 22, 148-169.
- Esparon, M., N. Stoeckl, and E. Gyuris. (2013). ECO certification in Queensland wet tropics world heritage area: Is it good for business? In C. Tisdell (Ed.), *Handbook on tourism economics: Analysis, new applications and case studies*. Singapore: World Scientific Publishing.
- Essential Costa Rica. (2016). *Sustainability CST: The concept of sustainability*. Retrieved from <https://www.esencialcostarica.com>.
- Fairweather, J. C. Maslin, and D. Simmons. (2005). Environmental values and response to ecolabels among international visitors to New Zealand. *Journal of Sustainable Tourism*, 13, 82-98.
- Felicetti, G. (2015). The perceptions of stakeholder's from protected areas on ecotourism development. *Manager*, 22, 32-43.
- Fennell, D. (2001). A content analysis of ecotourism definitions. *Current Issues in Tourism*, 4, 403-421.
- Fennell, D. (2020). *Ecotourism: Fifth Edition*. New York, New York: Routledge.
- Ferraro, P. and M. Hanauer. (2014). Quantifying causal mechanisms to determine how protected areas affect poverty through changes in ecosystem services and infrastructure. *Proceedings of the National Academy of Sciences*, 111, 4332-4337.
- Fletcher, J. and Y. Morakabati. (2008). Tourism Activity, Terrorism and Political Instability within the Commonwealth: The Cases of Fiji and Kenya. *International Journal of Tourism Research*, 10, 537-556.
- Floyd, M. (2004). The effect of risk perceptions on intentions to travel in the aftermath of September 11, 2001. *Journal of Travel and Tourism Marketing*, 15, 19.
- Floyd, M. and L. Pennington-Gray. (2004). Profiling risk perceptions of tourists. *Annals of Tourism Research*, 31, 1051-1054.
- Font, X. (2002). Environmental certification in tourism and hospitality: progress, process, and prospects. *Tourism Management*, 23, 197-205.
- Font, X. (2005). Sustainability standards in the global economy. In W. Theobald (Ed.) *Global Tourism*. Oxford: Butterworth-Heinemann.

- Font, X. and C. Harris. (2004). Rethinking standards from green to sustainable. *Annals of Tourism Research*, 31, 986-1007.
- Font, X. and M. Sallows. (2002). Setting global sustainability standards: the Sustainable Tourism Stewardship Council. *Tourism Recreation Research*, 27, 21-32.
- Font, X. and R. Buckley. (2001). *Tourism Ecolabelling: Certification and Promotion of Sustainable Management*. Wallingford: CAB International.
- Font, X., E. Haas, K. Thorpe, and L. Forsyth. (2001). Directory of tourism ecolabels. In X. Font and R.C. Buckley (Eds.) *Tourism Ecolabelling*. Wallingford: CAB International.
- Foster, D. (2003). *The customer's perception of tourism accreditation*. Melbourne: Centre for Management Quality Research, University of Melbourne.
- Fridgen, J. (1991). *Dimensions of Tourism*. Educational Institute, American Hotel and Motel Association, Business and Economics.
- Frost, W. and C. Hall. (2009). *Tourism and national parks. International perspectives on development, histories, and change*. New York: Routledge.
- Fuchs, G. (2013). Low versus High Sensation-seeking Tourists: A Study of Backpackers' Experience Risk Perception. *International Journal of Tourism Research*, 15, 81-92.
- Fuchs, G. and A. Reichel. (2011). An Exploratory Inquiry into Destination Risk Perceptions and Risk Reduction Strategies of First Time vs. Repeat Visitors to a Highly Volatile Destination. *Tourism Management*, 32, 266-276.
- Fuchs, G., N. Uriely, A. Reichel, and D. Maoz. (2013). Vacationing in a Terror-Stricken Destination: Tourists' Risk Perceptions and Rationalizations. *International Journal of Travel Research*, 52, 182-191.
- Garen, E., T. Clark, A. Willard, and C. Cromley. (2000). *Appraising Ecotourism in Conserving Biodiversity*. Foundations of Natural Resources Policy and Management. New Haven: Yale University Press.
- Garg, A. (2013). A study of tourist perception towards travel risk factors in tourist decision making. *Asian Journal of Tourism and Hospitality Research*, 7, 47-57.
- Garg, A. (2015). Travel Risks vs Tourist Decision Making: A Tourist Perspective. *International Journal of Hospitality & Tourism Systems*, 8, 1-9.

- Garrod, B. (2003). Local Participation in the Planning and Management of Ecotourism: A Revised Model Approach. *Journal of Ecotourism*, 2, 33-53.
- Gartner, W. (1994). Image formation process. *Journal of Travel and Tourism Marketing*, 2, 191-215.
- Gartner, C. and J. Cukier. (2011). Is tourism employment a sufficient mechanism for poverty reduction? A case study from Nkhata Bay, Malawi. *Current Issues in Tourism*, 15, 545-562.
- Gill, A. and M. Reed. (1997). The reimagining of a Canadian resource town: Postproductivism in a North American context. *Applied Geographic Studies*, 1, 129-147.
- GlobalData. (2017). *Top Trends in Sustainable Tourism: An analysis of the key trends in sustainable tourism and the business opportunities they create for the travel and tourism industry*. Retrieved from <https://www.globaldata.com>.
- Goeldner, C., B. Ritchie, and R. McIntosh. (2006). *Tourism Principles, Practices, and Philosophies*. New York: John Wiley and Sons.
- Graham, M. (2003). Confronting multicollinearity in ecological multiple regression. *Ecology*, 84, 2809-2815.
- Gray, J. (1997). *How Green is Your Ecotour?* Sawasdee Inflight Magazine of Thai Airways International.
- Gray, J. and M. Wilson. (2009). The Relative Risk Perception of Travel Hazards. *Environment and Behavior*, 41, 185-204.
- Guisan, A. and W. Thuiller. (2005). Predicting species distribution: offering more than simple habitat models. *Ecology Letters*, 8, 993-1009.
- Gumede, T. and A. Nzama. (2019). Ecotourism as a mechanism for local economic development: the case of communities adjacent to the Oribi Gorge Nature Reserve, KwaZulu-Natal, South Africa. *African Journal of Hospitality, Tourism and Leisure*, 8, 1-19.
- Gundersen, V., M. Mehmetoglu, O. Vistad, and O. Andersen. (2015). Linking visitor motivation with attitude towards management restrictions on use in a national park. *Journal of Outdoor Recreation and Tourism*, 9, 77-86.
- Gursoy, D., C. Jurowski and M. Uysal. (2002). Resident attitudes. A structural modeling approach. *Annals of Tourism Research*, 29, 79-105.

- Haaland, H. and O. Aas. (2010). Ecotourism Certification – Does it Make a Difference? A Comparison of Systems from Australia, Costa Rica, and Sweden. *Scandinavian Journal of Hospitality and Tourism*, 10, 375-385.
- Hall, C., D. Timothy, and D. Duval. (2003). *Safety & Security in Tourism: Relationships, Management, and Marketing*. New York: Haworth Hospitality Press.
- Hamele, H. (2002). Eco-labels for Tourism in Europe: Moving the Market toward More Sustainable Practices. In M. Honey (Ed.) *Ecotourism and Certification: Setting Standards in Practice*. Island Press.
- Hampton, M. and J. Jeyacheya. (2020). Tourism-Dependent Small Islands, Inclusive Growth, and the Blue Economy. *One Earth*, 2, 8-10.
- Hansen, A. (2007). *The Ecotourism Industry and the Sustainable Tourism Eco-Certification Program (STEP)*. Sustainable Travel International.
- Henderson, J. (2007). *Tourism Crisis: Causes, Consequences, and Management*. USA: Butterworth-Heinemann.
- Herbig, P. and B. O'Hara. (1997). Ecotourism: a guide for marketers. *European Business Review*, 97, 231-236.
- Hidalgo, J. (2014). Growth without poverty reduction: The case of Costa Rica. *CATO Institute Economic Development Bulletin, Center for Global Liberty and Prosperity*, 18, 1-8.
- Higgins, M. (2006). *If it worked for Costa Rica...* New York Times.
- Higham, J. (2007). *Critical Issues in Ecotourism: Understanding a complex tourism phenomenon*. Elsevier Ltd.
- Higham, J. and M. Luck. (2002). Urban ecotourism: a contradiction in terms? *Journal of Ecotourism*, 1, 36-51.
- Hintzen, A. (2014). *Costa Rica*. CLAS: Center for Latin American Studies, University of Miami.
- Hitchcock, M. (1993). Tourism in South East Asia: Introduction. In M. Hitchcock, V. King, and M. Parnwell (Eds.) *Tourism in South East Asia*. London: Routledge.
- Hodgson, G. and J.A. Dixon. (2000). El Nido revisited: ecotourism, logging and fisheries. In H. Cesar (ed.) *Collected Essays on the Economics of Coral Reefs*. Swedish International Development Co-operation Agency.

- Holden, A., J. Sonne, and M. Novelli. (2011). Tourism and poverty reduction: An interpretation by the poor of Elmina, Ghana. *Tourism Planning and Development*, 8, 317-334.
- Holub, M. (2015). Ecotourism Certification Programs: Standards and Benefits. *Baltic Journal of Economic Studies*, 1, 67-74.
- Honey, M. (1999). *Ecotourism and sustainable development: Who owns paradise?* Washington, DC: Island Press.
- Honey, M. (2002). *Ecotourism and Certification: Setting Standards in Practice*. Island Press.
- Honey, M. (2003). Giving a grade to Costa Rica's green tourism. *NACLA Report on the Americas*, 36, 39-47.
- Honey, M. (2003). Protecting Eden: setting green standards for the tourism industry. *Environment*, 45, 8-22.
- Honey, M. (2007). The role of certification and accreditation in ensuring tourism contributes to conservation. In R. Bushell and P. Eagles (Eds.) *Tourism and protected areas: Benefits beyond boundaries*. Wallingford: CAB International.
- Honey, M. (2008). *Ecotourism and Sustainable Development: Who Owns Paradise?* Island Press, Center for Resource Economics.
- Honey, M. and A. Rome. (2000). *Ecotourism and sustainable tourism certification: Where are we today?* Draft report, prepared for the ecotourism and sustainable certification workshop, Nov. 17-19, Mohonk Mountain House, New York.
- Honey, M. and A. Rome. (2001). *Protecting Paradise: Certification Programs for Sustainable Tourism and Ecotourism*. Ecotourism and Sustainable Development Project, Institute for Policy Studies.
- Honey, M. and E. Stewart. (2002). Introduction in M. Honey (Ed.) *Ecotourism and Certification: Setting Standards in Practice*. Washington, DC, Island Press.
- Horton, L. (2009). Buying up nature: Economic and social impacts of Costa Rica's ecotourism boom. *Latin American Perspectives*, 36, 93-107.
- Howitt, J. and C. Mason. (2018). Ecotourism and sustainable rural development in Pérez Zeledón, Costa Rica. *Journal of Rural and Community Development*, 13, 67-84.
- Huan, T., C. Tsai, and L. Shelby. (2006). Impacts of no-escape natural disaster on tourism: A case study in Taiwan. *Advances in Hospitality and Leisure*, 2, 91-106.

- Hunt, C., W. Durham, L. Driscoll, and M. Honey. (2015). Can ecotourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica. *Journal of Sustainable Tourism*, 23, 339–357.
- Hwang, K. and J. Lee. (2018). Antecedents and Consequences of Ecotourism Behavior: Independent and Interdependent Self-Construals, Ecological Belief, Willingness to Pay for Ecotourism Services and Satisfaction with Life. *Sustainability*, 10, 789-807.
- Isaacs, J. (2000). The limited potential of ecotourism to contribute to wildlife conservation. *Wildlife Society Bulletin*, 28, 61-69.
- Jaafar, M, and S.A. Maideen. (2012). Ecotourism-related products and activities, and the economic sustainability of small and medium island chalets. *Tourism Management*, 33, 683-691.
- James, J., S. West, S. Davis, and L. Reddick. (2011). Does sustainable certification knowledge influence tourist behavior? *Journal of Tourism Insights*, 1, 59-64.
- Job, H. and F. Paesler. (2013). Links between nature-based tourism, protected areas, poverty alleviation, and crises – The example of Wasini island (Kenya). *Journal of Outdoor Recreation and Tourism*, 1, 18-28.
- Johnson, P. (2002). Scrubbing the greenwashers. *Alternative Journal*, 28, 28.
- Johnson, P. (2010). Realizing Rural Community-Based Tourism Development: Prospects for Social-Economy Enterprises. *Journal of Rural and Community Development*, 5, 150-162.
- Jonas, A., Y. Mansfeld, S. Paz, and I. Potasman. (2011). Determinants of Health Risk Perceptions among Low-Risk-Taking Tourists Traveling to Developing Countries. *Journal of Travel Research*, 50, 87-99.
- Jones, G. and A. Spadafora. (2016). *Creating Ecotourism in Costa Rica, 1970-2000*. Cambridge: Cambridge University Press.
- Jones, T. and T. Ohsawa. (2016). Monitoring Nature-based tourism trends in Japan's National Parks: Mixed Messages from Domestic and Inbound Visitors. *Parks*, 22, 25-36.
- Joyner, L., Q. Lackey, and K. Bricker. 2018. *Ecotourism Outlook 2018*. Outdoor Recreation, Education, and Tourism Lab, University of Utah.

- Judkis, M. (2008). *Deceptive Greenwashing Aims to Trick Ecotourists*. U.S. News and Report.
- Kahlenborn, W. and A. Dominé. (2001). The future belongs to international ecolabelling schemes. In X. Font and R.C. Buckley (Eds.) *Tourism Ecolabelling*. Wallingford: CAB International.
- Karl, M. (2018). Risk and Uncertainty in Travel Decision-Making: Tourist and Destination Perspective. *Journal of Travel Research*, 57, 129-146.
- Karlsson, L. and S. Dolnicar. (2016). Does eco certification sell tourism services? Evidence from a quasi-experimental observation study in Iceland. *Journal of Sustainable Tourism*, 24, 694-714.
- Kasim, A. (2004). BESR in the hotel sector: A look at tourist's propensity towards environmentally and socially friendly hotel attributes in Pulau Pinang, Malaysia. *International Journal of Hospitality and Tourism Administration*, 5, 61-83.
- Kaur, C. (2006). *National ecotourism plan: Assessing implementation of the guidelines for marine parks*. Research Centre for Coastal and Marine Environment, Maritime Institute of Malaysia.
- Keogh, B. (1990). Public Participation in Community Tourism Planning. *Annals of Tourism Research*, 17, 449-465.
- Kerley, G., B. Geach, and C. Vial. (2003). Jumbos or bust: Do tourists' perceptions lead to an under-appreciation of biodiversity? *South African Journal of Wildlife Research*, 33, 13-21.
- Kim, H., S. Lee, M. Uysal, J. Kim, and K. Ahn. (2015). Nature-Based Tourism: Motivation and Subjective Well-Being. *Journal of Travel and Tourism Marketing*, 32, 76-96.
- Kim, M., Y. Xie, and G. Cirella. (2019). Sustainable Transformative Economy: Community-Based Ecotourism. *Sustainability*, 11, 1-15.
- Kimengsi, J., M. Kechia, B. Azibo, J. Pretzsch, and J. Kwei. (2019). Households' Assets Dynamics and Ecotourism Choices in the Western Highlands of Cameroon. *Sustainability*, 11, 1844-1860.
- Kiper, T., G. Özdemir, and C. Sağlam. (2011). Environmental, Socio-Cultural And Economical Effects Of Ecotourism Perceived By The Local People In The Northwestern Turkey: Kıyıköy Case. *Scientific Research and Essays*, 6, 4009-4020.

- Kiss, A. (2004). Is community-based ecotourism a good use of biodiversity conservation funds? *TRENDS in Ecology and Evolution*, 19, 232-237.
- Klein, L. and R. Dodds. (2017). Blue flag beach certification: an environmental management tool or tourism promotional tool? *Tourism Recreation Research*, 43, 39-51.
- Kline, C. and S. Slocum. (2015). Neoliberalism in ecotourism? The new development paradigm of multinational projects in Africa. *Journal of Ecotourism*, 14, 99-112.
- Ko, T. (2005). Development of a tourism sustainability assessment procedure: A conceptual approach. *Tourism Management*, 26, 431-445.
- Koens, J., C. Dieperink, and M. Miranda. (2009). Ecotourism as a development strategy: experiences from Costa Rica. *Environment, Development, and Sustainability*, 11, 1225-1237.
- Kontogeorgopoulos, N. (2004). Conventional tourism and ecotourism in Phuket, Thailand: Conflicting paradigms or symbiotic partners? *Journal of Ecotourism*, 3, 87-108.
- Kotler, P., J. Bowen, and J. Makens. (2013). *Marketing for Hospitality and Tourism*. Prentice Hall.
- Kozak, M. and K. Nield. (2004). The Role of Quality and Eco-Labeling Systems in Destination Benchmarking. *Journal of Sustainable Tourism*, 12, 138-148.
- Kozak, M., J. Crofts, and R. Law. (2007). The Impact of the Perception of Risk on International Travelers. *International Journal of Tourism Research*, 9, 233-242.
- Krut, R. and H. Gleckman. (1998). *ISO 14001: A Missed Opportunity for Sustainable Global Industrial Development*. Earthscan Publications.
- Kusz, J. (1997). Ecolabel investments: What's behind label. *Forum for Applied Research and Public Policy*, 12, 133-136.
- Kuvan, Y. and P. Akan. (2012). Conflict and agreement in stakeholder attitudes: residents and hotel managers' views of tourism impacts and forest-related tourism development. *Journal of Sustainable Tourism*, 20, 571-584.
- Lapa Rios. (2016). *Sustainability – The Importance of Certification for Sustainable Tourism*. Retrieved from <https://www.laparios.com>.

- Lapeyre, R. (2011). The Grootberg lodge partnership in Namibia: Towards poverty alleviation and empowerment for long-term sustainability? *Current Issues in Tourism, 14*, 221-234.
- Lebe, S. and S. Zupan. (2012). From eco-ignorance to eco-certificates: Environmental management in Slovene Hotels. In D. Leslie (Ed.) *Tourism enterprises and the sustainability agenda across Europe*. Farnham: Ashgate.
- Lebe, S.S. and I. Vrecko. (2015). Eco-labels and Schemes: A Requisitely Holistic Proof of Tourism's Social Responsibility? *Systems Research and Behavioral Science, 32*, 247-255.
- Lee, G., A. Morrison, and J. O'Leary. (2006). The economic value portfolio matrix: A target market selection tool for destination marketing organization. *Tourism Management, 27*, 576-588.
- Lee, S., S. Lee, and G. Lee. (2013). Ecotourists' motivation and revisit intention: A case study of restored ecological parks in South Korea. *Asia Pacific Journal of Tourism Research*.
- Lepp, A. and H. Gibson. (2003). Tourist Roles, Perceived Risk and International Tourism. *Annals of Tourism Research, 30*, 606-624.
- Lepp, A. and H. Gibson. (2008). Sensation Seeking and Tourism: Tourist Role, Perception of Risk and Destination Choice. *Tourism Management, 29*, 740-750.
- Li, C., S. McCabe, and Y. Chen. (2017). Destination Choice of Chinese Long-haul Outbound Tourists and Market Segmentation. *Journal of China Tourism Research, 13*, 298-315.
- Liu, Z. (2003). Sustainable tourism development: a critique. *Journal of Sustainable Tourism, 11*, 459-475.
- Lonn, P., N. Mizoue, T. Ota, T. Kajisa, and S. Yoshida. (2018). Evaluating the Contribution of Community-based Ecotourism (CBET) to Household Income and Livelihood Changes: A Case Study of the Chambok CBET Program in Cambodia. *Ecological Economics, 151*, 62-69.
- López-Sánchez, Y. and J. Pulido-Fernández. (2016). Factors influencing the willingness to pay for sustainable tourism: a case of mass tourism destinations. *International Journal of Sustainable Development and World Ecology, 24*, 262-275.
- Lovan, R. W., Murry, M., & Shaffer, R. (2004). *Participatory governance: Planning, conflict mediation and public decision-making in civil society*. Burlington: Ashgate.

- Lubbe, B. (1998). Primary image as a dimension of destination image: An empirical assessment. *Journal of Travel and Tourism Marketing*, 7, 21-43.
- Lübbert, C. (2001). Tourism ecolabels market research in Germany. In X. Font and R. Buckley (Eds.) *Tourism Ecolabelling: certification and promotion of sustainable management*. Wallingford: CAB International.
- Lundberg, D., E. Krishnamoorthy, and M. Stavenga. (1991). *Tourism Economics*. New York: John Wiley.
- Luo, Y. and J. Deng. (2008). The new environmental paradigm and nature-based tourism motivation. *Journal of Travel Research*, 46, 392-402.
- Ma, B. and Y. Wen. (2016). Impact of ecotourism management on rural households' income: Based on propensity score matching method. *China Population, Resources, and Environment*, 26, 152-160.
- Ma, B., Z. Cai, J. Zheng, Y. Wen. (2019). Conservation, ecotourism, poverty, and income inequality – A case study of nature reserves in Qinling, China. *World Development*, 115, 236-244.
- Manning, E. and D. Dougherty. (1995). Sustainable tourism: preserving the golden goose. *Cornell Hotel and Restaurant Administration Quarterly*, 36, 29-41.
- Mansfeld, Y. (2006). The Role of Security Information in Tourism Crisis Management: The Missing Link. In Y. Mansfeld and A Pizam (Eds.) *Tourism, Security and Safety: From Theory to Practice*. Amsterdam: Elsevier Butterworth-Heinemann.
- Mansfield, E. and B. Helms. (1982). Detecting Multicollinearity. *The American Statistician*, 36, 158-160.
- Manwa, H. and F. Manwa. (2014). Poverty Alleviation through Pro-Poor Tourism: The Role of Botswana Forest Reserves. *Sustainability*, 6, 5697-5713.
- March, R. and I. Wilkinson. (2009). Conceptual tools for evaluating tourism partnerships. *Tourism Management*, 30, 455-462.
- Maser, B. and K. Weiermair. (1998). Travel decision-making: from the vantage point of perceived risk and information preferences. *Journal of Travel and Tourism Marketing*, 7, 107-121.
- Mason, P. (2003). *Tourism Impacts, Planning, and Management*. Taylor & Francis.

- Mason, P. and J. Cheyne. (2000). Resident attitudes to proposed tourism development. *Annals of Tourism Research*, 27, 391-411.
- Mastny, L. (2001). *Treading Lightly: New Paths for International Tourism*. Worldwatch Paper Washington, D.C.: Worldwatch Institute.
- Matarrita-Cascante, D., M. Brennan, and A. Luloff. (2010). Community agency and sustainable tourism development: The case of La Fortuna, Costa Rica. *Journal of Sustainable Tourism*, 18, 735–756.
- Mawby, R. (2000). Tourists' perceptions of security: the risk-fear paradox. *Tourism Economics*, 6, 109-121.
- McCool, S. and S. Martin. (1994). Community Attachment and Attitudes Towards Tourism Development. *Journal of Travel Research*, 32, 29-34.
- McGahey, S. (2012). The ethics, obligations, and stakeholders of ecotourism marketing. *Intellectual Economics*, 6, 75-88.
- McKercher, B. and B. Robbins. (1998). Business Development Issues Affecting Nature-Based Tourism Operators in Australia. *Journal of Sustainable Tourism*, 6, 173-188.
- McLaren, D. (2003). *Rethinking Tourism and Ecotravel (2nd Edition)*. Bloomfield: Kumarian Press.
- McLellan, E., K. MacQueen, and J. Neidig. (2003). Beyond the Qualitative Interview: Data Preparation and Transcription. *Field Methods*, 15, 63-84.
- Mearns, K. (2012). Community-based tourism and peace parks: Benefits to local communities through conservation in Southern Africa. *Acta Academica*, 44, 70-87.
- Medina, L. (2005). Ecotourism and Certification: Confronting The Principles And Pragmatics Of Socially Responsible Tourism. *Journal of Sustainable Tourism*, 13, 281-295.
- Melo, C. and S. Wolf. (2005). Empirical assessment of eco-certification: The case of Ecuadorian bananas. *Organization and Environment*, 18, 287-317.
- Mensah, I. (2014). Different Shades of Green: environmental management in hotels in Accra. *International Journal of Tourism Research*, 16, 450-461.

- Meyer, D. (2008). Pro-poor tourism: from leakages to linkages. A conceptual framework for creating linkages between the accommodation sector and 'poor' neighboring communities. *Current Issues in Tourism*, 10, 558-583.
- Michels, B. (2012). *Ecotourism in Africa*. Safari Guide Africa.
- Milder, J.C., D. Newsom, C. Sierra, and V. Bahn. (2016). Reducing tourism's threats to biodiversity: effects of a voluntary sustainability standard and training program on 106 Latin American hotels, lodges, and guesthouses. *Journal of Sustainable Tourism*, 24, 1727-1740.
- Mill, R., and A. Morrison. (2009). *The Tourism System*. Kendall Hunt Publishing Company.
- Millar, M., K. Mayer, and S. Baloglu. (2012). Importance of green hotel attributes to business and leisure travelers. *Journal of Hospitality and Marketing Management*, 21, 395-413.
- Minca, C. and M. Linda. (2000). Ecotourism on the Edge: the Case of Corcovado National Park, Costa Rica. In X. Font and J. Tribe (Eds.) *Forest Tourism and Recreation: Case studies in environmental management*.
- Mitchell, J. and C. Ashley. (2010). *Tourism and Poverty Reduction: Pathways and Prosperity*. Earthscan, IUCN.
- Mitchell, V. and V. Vassos. (1997). Perceived Risk and Risk Reduction in Holiday Purchases: A Cross-Cultural and Gender Analysis. *Journal of Euromarketing*, 6, 47-79.
- Molina-Murillo, S. (2019). Sustainable tourism certification and its perceived socio-economic impacts in Costa Rican hotels. *PASOS: Revista de Turismo y Patrimonio Cultural*. 17, 363-372.
- Morgan, R. (1999). A novel, user-based rating system for tourism beaches. *Tourism Management*, 20, 393-410.
- Morgan, N., A. Pritchard, and R. Pride. (2011). *Destination brands. Managing Place Reputation*. Butterworth-Heinemann.
- Morley, C. (1998). A dynamic international demand model. *Annals of Tourism Research*, 25, 70-84.
- Muganda, M., M. Sahli, and K. Smith. (2010). Tourism's contribution to poverty alleviation: A community perspective from Tanzania. *Development Southern Africa*, 27, 629-646.

- Muhanna, E. (2007). The Contribution of Sustainable Tourism Development in Poverty Alleviation of Local Communities in South Africa. *Journal of Human Resources in Hospitality and Tourism*, 6, 37-67.
- Mura, P. (2010). Scary... but I like it! Young tourists' perceptions of fear on holiday. *Journal of Tourism and Cultural Change*, 8, 30-49.
- Murthy, E. (2008). *Introduction to Tourism and Hospitality Ethics*. India: ABD Publishers.
- Mylan, J. (2018). Sustainable Tourism in Costa Rica: Aligning Tourists' Interests with Local Development. *PURE Insights*, 7.
- Nardi, P.M. (2006). *Doing Survey Research: A Guide to Quantitative Methods*. Pearson Education, Inc.
- Neumann, R.P. (2000). Land, Justice, and the politics of conservation in Tanzania. In C. Zerner (Ed.) *People, plants, and justice: the politics of nature conservation*. New York: Columbia University Press.
- Newsome, D., S.A. Moore, and R.K. Dowling. (2002). *Natural Area Tourism: Ecology, Impacts and Management*. Clevedon: Channel View Publications.
- Ng, S., J. Lee, and G. Soutar. (2007). Tourists' intention to visit a country: The impact of cultural distance. *Tourism Management*, 28, 1497-1506.
- Nicolau, J. and F. Mas. (2006). The influence of distance and prices on the choice of tourist destinations: The moderating role of motivations. *Tourism Management*, 27, 982-996.
- Nyaupane, G.P., D.B. Morais, and A.R. Graefe. (2004). Nature-based tourism constraints: A cross-activity comparison. *Annals of Tourism Research*, 31, 540-555.
- Nyirenda, V., C. Milimo, and N. Namukonde. (2019). Local people's perspectives on wildlife conservation, ecotourism and community livelihoods. In M. Stone, M. Lenao, and N. Moswete (Eds.) *Natural Resources, Tourism, and Community Livelihoods in Southern Africa*. Routledge.
- Ogutu, J., H. Piepho, H. Dublin, N. Bhola, and R. Reid. (2008). Rainfall influences on ungulate population abundance in the Mara-Serengeti ecosystem. *Journal of Animal Ecology*, 77, 814-829.

- Orams, M. (2004). Why dolphins may get ulcers: considering the impacts of cetacean-based tourism in New Zealand. *Tourism in Marine Environments*, 1, 17-28.
- Organization for Economic Co-operation and Development (OECD). (2020). *OECD Tourism Trends and Policies 2020 – Costa Rica*. Retrieved from <https://www.oecd.org>.
- Osman, T., D. Shaw, and E. Kenawy. (2018). Examining the extent to which stakeholder collaboration during ecotourism planning processes could be applied within an Egyptian context. *Land Use Policy*, 78, 126-137.
- Palmer, N. and N. Chuamuangphan. (2018). Governance and local participation in Ecotourism: community-level tourism stakeholders in Chiang Rai province, Thailand. *Journal of Ecotourism*, 17, 320-337.
- Park, D., J. Lee, and I. Han. (2007). The effect of on-line consumer reviews on consumer purchasing intention: the moderating role of involvement. *International Journal of Electronic Commerce*, 11, 125-148.
- Park, K. and Y. Reisinger. (2010). Differences in the Perceived Influence of Natural Disasters and Travel Risk on International Travel. *Tourism Geographies*, 12, 1-24.
- Pickering, C.M and W. Hill. (2007). Impacts of recreation and tourism on plant biodiversity and vegetation in protected areas in Australia. *Journal of Environmental Management*, 85, 791-800.
- Pizam, A., G. Jeong, A. Reichel, H. van Boemmel, J. Lusson, L. Steynberg, O. State-Costache, S. Volo, C. Kroesbacher, J. Kucerova, and N. Montmany. (2004). The relationship between risk-taking, sensation-seeking, and the tourist behavior of young adults: a cross-cultural study. *Journal of Travel Research*, 42, 251-260.
- Platania, M. and M. Rizzo. (2018). Willingness to pay for protected areas: A case of Etna Park. *Ecological Indicators*, 93, 201-206.
- Pleumaron, A. (1993). What's wrong with mass ecotourism. *Contours Bangkok*, 6, 15-21.
- Ponnapureddy, S., J. Priskin, T. Ohnmacht, F. Vinzenz, and W. Wirth. (2017). The influence of trust perception on German tourists' intention to book a sustainable hotel: a new approach to analyzing marketing information. *Journal of Sustainable Tourism*, 25, 970-988.
- Puhakka, R. and P. Siikamaki. (2012). Nature tourists' response to ecolabels in Oulanka PAN Park, Finland. *Journal of Ecotourism*, 11, 56-73.

- Rahman, A. (2010). *Application of GIS In Ecotourism Development: A Case Study In Sundarbans, Bangladesh*. Mid-Sweden University Masters Thesis.
- Rattan, J.K. (2015). Is certification the answer to creating a more sustainable volunteer tourism sector? *Worldwide Hospitality and Tourism Themes*, 7, 107-126.
- Reed, M., A. Graves, N. Dandy, H. Posthumus, K. Hubacek, J. Morris, and L. Stringer. (2009). Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of Environmental Management*, 90, 1933-1949.
- Rex, E. and H. Baumann. (2007). Beyond ecolabels: what green marketing can learn from conventional marketing. *Journal of Cleaner Production*, 15, 567-576.
- Richter, L. (2003). International Tourism and Its Global Public Health Consequences. *Journal of Travel Research*, 41, 340-347.
- Ritchie, J. (1984). Assessing the impact of hallmark events: Conceptual and research issues. *Journal of Travel Research*, 23, 2-11.
- Rittichainuwat, B. and G. Chakraborty. (2009). Perceived Travel Risks Regarding Terrorism and Disease: The Case of Thailand. *Tourism Management*, 30, 410-418.
- Rogerson, C. (2012). Tourism-agriculture linkages in rural South Africa: Evidence from the accommodation sector. *Journal of Sustainable Tourism*, 20, 477-496.
- Rome, A. (2005). *Current range of incentives offered to businesses by 'Green' certification programs and quality-ratings systems*. The International Ecotourism Society and Rainforest Alliance.
- Rome, A. (2007). Quality in ecotourism: The community perspective. In R. Black and A. Crabtree (Eds.) *Quality assurance and certification in ecotourism*. Wallingford: CAB International.
- Roseland, M. (2000). Sustainable community development: integrating environmental, economic, and social objectives. *Progress in Planning*, 54, 73-132.
- Roseland, M. and M. Spiliotopoulou. (2017). Sustainable Community Planning and Development. *Encyclopedia of Sustainable Technologies*, 2, 53-61.
- Rotherham, T. (2005). *The trade and environmental effects of ecolabels: Assessment and response*. Paris: UNEP.
- Rowe, M. (2011). *Greener Tourism?* The Independent.

- Rowe, T. and J. Higham. (2007). Ecotourism certification in New Zealand: Operator and industry perspectives. In R. Black and A. Crabtree (Eds.) *Quality assurance and certification in ecotourism*. Wallingford: CAB International.
- Roxe, H. (1998). Interested in an eco-tour? Tread carefully. *Time International*, 6.
- Salafsky, N. (2001). A systematic test of an enterprise strategy for community-based biodiversity conservation. *Conservation Biology*, 15, 1585-1595.
- Salehi, S., A. Asl, and S. Abdoli. (2017). Ecotourism Development with an Emphasis on Local Communities' Participation (Case Study: The Village of Junat Rudbar, Ramsar County). *Journal of Research and Rural Planning*, 6, 186-201.
- Salzhauer, A. (1991). Obstacles and opportunities for a consumer ecolabel. *Environment*, 33, 10-15.
- Sanchez, R.V. (2018). Conservation strategies, protected areas, and ecotourism in Costa Rica. *Journal of Park and Recreation Administration*, 36, 115-128.
- Sangpikul, A. (2011). Developing good practices for ecotourism tour operators. *Sasin Journal of Management*, 17, 53-86.
- Sangpikul, A. (2015). An investigation of ecotourism practices of tour operators in Thailand, Malaysia, and Indonesia. *Modern Management Journal*, 13, 153-172.
- Sangpikul, A. (2017). Ecotourism Impacts on the Economy, Society, and Environment of Thailand. *Journal of Reviews on Global Economics*, 6, 302-312.
- Sasidharan, V. and J. Font. (2001). Pitfalls of ecolabelling. In X. Font and R. Buckley (Eds.) *Tourism Ecolabelling*. Oxon: CAB International.
- Sasidharan, V., E. Sirakaya, and D. Kerstetter. (2002). Developing countries and tourism ecolabels. *Tourism Management*, 23, 161-174.
- Scarpaci, C., N. Dayanthi, and P. Corkerin. (2003). Compliance with Regulations by "Swim with Dolphins" Operators in Port Philip Bay, Victoria, Australia. *Environmental Management*, 31, 342-347.
- Scherl, L. (2005). Protected areas and local and indigenous communities. In J. McNeely (Ed.) *Friends for life: New partnerships in support of protected areas*. Gland: IUCN.
- Scheyvens, R. (2009). Pro-poor tourism: Is there value beyond the rhetoric? *Tourism Recreation Research*, 34, 191-196.

- Schilcher, D. (2007). Growth versus equity: The continuum of pro-poor tourism and neoliberal governance. *Current Issues in Tourism*, 10, 166-193.
- Self, R., D. Self, and J. Bell-Haynes. (2010). Marketing Tourism in the Galapagos Islands: Ecotourism or Greenwashing? *International Business & Economics Journal*, 9, 111-125.
- Serenari, C., M. Peterson, T. Wallace, and P. Stowhas. (2016). Private protected areas, ecotourism development and impacts on local people's well-being: a review from case studies in Southern Chile. *Journal of Sustainable Tourism*.
- Shaffer, R., S. Deller, and D. Marcouiller. (2006). Rethinking Community Economic Development. *Economic Development Quarterly*, 20, 59-74.
- Sharifpour, M., G. Walters, B. Ritchie, and C. Winter. (2014). Investigating the Role of Prior Knowledge in Tourist Decision Making: A Structural Equation Model of Risk Perceptions and Information Search. *Journal of Travel Research*, 53, 307-322.
- Sharpley, R. (2001). The consumer behaviour context of ecolabelling. In X. Font and R.C. Buckley (Eds.) *Tourism Ecolabelling*. Wallingford: CAB International.
- Sharpley, R. (2014). Host perceptions of tourism: A review of the research. *Tourism Management*, 42, 37-49.
- Simmons, D. (1994). Community participation in tourism planning. *Tourism Management*, 15, 98-108.
- Simpson, M.C. (2009). An integrated approach to assess the impacts of tourism on community development and sustainable livelihoods. *Community Development Journal*, 44, 186-208
- Snyman, S. (2014). The impact of ecotourism employment on rural household incomes and social welfare in six southern African countries. *Tourism and Hospitality Research*, 0, 1-16.
- Snyman, S. (2016). The role of private sector ecotourism in local socio-economic development in southern Africa. *Journal of Ecotourism*, 16, 247-268.
- Sofield, T. (2003). *Empowerment for Sustainable Tourism Development*. Oxford: Pergamon.
- Sonmez, S. and A. Graefe. (1998a). Influence of terrorism risk on foreign tourism decisions. *Annals of Tourism Research*, 25, 112-144.

- Sonmez, S. and A. Graefe. (1998b). International vacation decision and terrorism risk. *Annals of Tourism Research*, 25, 122-124
- Sonmez, S., Y. Apostopoulos, and P. Tarlow. (1999). Tourism in Crisis: Managing effects on Terrorism. *Journal of Travel Research*, 38, 13-18.
- Sparks, B., H. Perkins, and R. Buckley. (2013). Online travel reviews as persuasive communication: The effects of content type, source, and certification logos on consumer behavior. *Tourism Management*, 39, 1-9.
- Spenceley, A. (2005). *Certification tools for tourism in Africa social, environmental and economic criteria*. Report to the International Ecotourism Society.
- Spenceley, A. (2008). Impacts of wildlife tourism on rural livelihoods in southern Africa. In A. Spenceley (Ed.) *Responsible tourism: Critical issues for conservation and development*. UK: Earthscan, IUCN.
- Spenceley, A. (2008). *Responsible tourism: Critical issues for conservation and development*. Earthscan, IUCN.
- Spenceley, A. (2018). Sustainable tourism certification in the African hotel sector. *Tourism Review*, 74, 179-193.
- Spenceley, A. and A. Bien. (2013). Ecotourism standards: international accreditation, local certification and indicators. In Ballantyne, R. and J. Packer (Eds.) *The International Handbook on Ecotourism*. Cheltenham, UK.
- Stem, C., J. Lassoie, D. Lee, D. Deshler, and J. Schelhas. (2003). Community participation in ecotourism benefits: The link to conservation practices and perspectives. *Society & Natural Resources*, 16, 387-413.
- Stone, M. and G. Wall. (2004). Ecotourism and Community Development: Case Studies from Hainan, China. *Environmental Management*, 33, 12-24.
- Stronza, A. (2001). Forging new ground for ecotourism and other alternatives. *Annual Review of Anthropology*, 30, 261-283.
- Su, M.M., G. Wall, and Z. Ma. (2014). Assessing ecotourism from a multi-stakeholder perspective: Xingkai Lake National Nature Reserve, China. *Environmental Management*, 54, 1190-1207.
- Synergy, WWF-UK. (2000). *Tourism Certification Schemes Still Leave Much to be Desired*. Press Release.

- Taylor, J., G. Dyer, M. Stewart, A. Yunez-Naude, and S. Ardila. (2002). The economics of “eco-tourism:” a Galapagos Island economy-wide perspective. *Economic Development and Cultural Change*, 51, 977-997.
- Tepelus, C.M. and R.C. Córdoba. (2005). Recognition schemes in tourism-from “eco” to sustainability? *Journal of Cleaner Production*, 13, 135-140.
- Thorgensen, J. (2000). Psychological determinants of paying attention to eco-labels in purchase decisions: model development and multinational validation. *Journal of Consumer Policy*, 23, 285-313.
- TIES (The International Ecotourism Society). (2006). *TIES Global Ecotourism Fact Sheet*. TIES Press Release.
- TIES (The International Ecotourism Society). (2015). *TIES Announces Ecotourism Principles Revision*. TIES Press Release.
- Tribe, J., X. Font, N. Griffiths, R. Vickery, and K. Yale. (2000). *Environmental management of rural tourism and recreation*. London: Cassell.
- Tsaur, S.H., Y.C. Lin, and J.H. Lin. (2006). Evaluating ecotourism sustainability from the integrated perspective of resource, community, and tourism. *Tourism Management*, 27, 640-653.
- Tsing, A., J. Brosius, and C. Zerner. (2005). Introduction: raising questions about communities and conservation. In J. Brosius, A. Tsing, and C. Zerner (Eds.) *Communities and conservation: histories and politics of community-based natural resource management*. Oxford: Rowman & Littlefield Publishers.
- Umuziranenge, G. and F. Muhirwa. (2017). Ecotourism as Potential Conservation Incentive and its Impact on Community Development around Nyungwe National Park (NNP): Rwanda. *Imperial Journal of Interdisciplinary Research*, 3, 447-456.
- United Nations Environment Programme (UNEP). (1998). *Ecolabels in the tourism industry*. United Nations Publication, UNEP, Industry and Environment, 39-43.
- UNWTO (United Nations World Tourism Organization). (2002). *Voluntary initiatives for sustainable tourism*. Madrid, World Tourism Organization.
- UNWTO (United Nations World Tourism Organization). (2004). *Press release*. Retrieved from <https://www.unwto.org>.

- UNWTO (United Nations World Tourism Organization). (2011). *Tourism towards 2030: A Global Overview*. UNWTO General Assembly. 19th Session. Retrieved from <https://www.unwto.org>.
- UNWTO (United Nations World Tourism Organization). (2016). *UNWTO Tourism Highlights, 2016 Edition*. Retrieved from <https://www.unwto.org>.
- UNWTO (United Nations World Tourism Organization). (2018). *UNWTO Tourism Highlights, 2018 Edition*. Retrieved from <https://www.unwto.org>.
- UNWTO (United Nations World Tourism Organization). (2019). *International Tourism Highlights, 2019 Edition*. Retrieved from <https://www.unwto.org>.
- UNWTO (United Nations World Tourism Organization). (2020). *International tourism, number of arrivals – Costa Rica*. Retrieved from <https://www.unwto.org>.
- Uriely, N., A. Reichel, and A. Shani. (2007). Ecological orientation of tourists: an empirical investigation. *Tourism and Hospitality Research*, 7, 161-175.
- Ute, J. and K. Lawonk. (2017). The multiple dimensions of consumption values in ecotourism. *International Journal of Culture, Tourism, and Hospitality Research*, 11, 18-34.
- Van Raaij, W. and D. Francken. (1984). Vacation decisions, activities, and satisfactions. *Annals of Tourism Research*, 11, 101-112.
- Vaughan, D. (2000). Tourism and Biodiversity: A Convergence of Interests? *International Affairs*, 76, 283-297.
- Viegas, A. (1998). *Environmental Management in Tourism*. Munich: R. Oldenburg Verlag.
- Vinodan, A. and J. Manalel. (2011). Local Economic Benefits of Ecotourism: A Case Study on Parambikulam Tiger Reserve in Kerala, India. *South Asian Journal of Tourism and Heritage*, 4, 93-109.
- Waltz, W. (2008). *Distinguishing green ecotourism operations from greenwashed ones*.
- Warnken, J. M. Bradley, and C. Guilding. (2005). Eco-resorts vs mainstream accommodation providers: an investigation of the viability of benchmarking environmental performance. *Tourism Management*, 26, 367-379.
- Watkin, J. (2003). *The Evolution of Ecotourism in East Africa: From an idea to an industry*. IIED Wildlife and Development Series No. 15.

- WCED (World Commission on Environment and Development). (1987). *Our Common Future*. Oxford University Press.
- Wearing, S. (2001). Exploring socio-cultural impacts on local communities. In D.B. Weaver (Ed.) *The Encyclopedia of Ecotourism*. New York: CAB International.
- Weaver, D. (1998). *Ecotourism in the Less Developed World*. New York: CABI International.
- Weaver, D. (2001). *Ecotourism*. Milton: John Wiley and Sons Australia, Ltd.
- Weaver, D. (2009). Reflections on sustainable tourism and paradigm change. In S. Gossling, M. Hall, and D. Weaver (Eds.) *Sustainable Tourism Futures: Perspectives on Systems, Restructuring, and Innovations*. New York: Routledge.
- Weaver, D. and L. Lawton. (2007). Twenty years on: the state of contemporary ecotourism research. *Tourism Management*, 28, 1168-1179.
- West, P. and J. Carrier. (2004). Ecotourism and authenticity: getting away from it all? *Current Anthropology*, 45, 483-498.
- Wheeller, B. (1997). Here we go, here we go, here we go eco. In M.J. Stabler (Ed.), *Tourism and sustainability: Principles to practice*. Wallingford: CAB International.
- Wong, J. and C. Yeh. (2009). Tourist Hesitation in Destination Decision Making. *Annals of Tourism Research*, 36, 6-23.
- World Health Organization (WHO). (1994). Quantifying the burden of disease: the technical basis for disability-adjusted life years. *Bulletin of the World Health Organization*, 72, 429-445.
- World Travel and Tourism Council (WTTC). (2018a). *Travel and tourism: Economic Impact 2018 World*. Retrieved from <https://wttc.org>.
- World Travel and Tourism Council (WTTC). (2018b). *Domestic Tourism – Importance & Economic Impact*. Retrieved from <https://wttc.org>.
- World Travel and Tourism Council (WTTC). (2019a). *Travel and Tourism Economic Impact 2019*. Retrieved from <https://wttc.org>.
- World Travel and Tourism Council (WTTC). (2019b). Travel and Tourism continues strong growth above global GDP. Retrieved from <https://wttc.org>.

- World Travel and Tourism Council (WTTC). (2019c). *The Economic Impact of Global Wildlife Tourism: Travel and Tourism as an Economic Tool for the Protection of Wildlife*. Retrieved from <https://wttc.org>.
- Wunder, S. (2000). Ecotourism and economic incentives – an empirical approach. *Ecological Economics*, 32, 465-479.
- Zairi, M. (1996). *Benchmarking for Best Practice: Continuous Learning through Sustainable Innovation*. Oxford: Butterworth-Heinemann.
- Zambrano, A., M. Almeyda, E. Broadbent, and W. Durham. (2010). Social and environmental effects of ecotourism in the Osa Peninsula of Costa Rica: The Lapa Rios case. *Journal of Ecotourism*, 9, 62–83.
- Zeppel, H. (2008). *Indigenous ecotourism: Sustainable development and management*. Wallingford: CAB International.
- Ziffer, K. (1989). *Ecotourism: the Uneasy Alliance*. Washington, DC: Conservation International, Ernst and Young.
- Zuckerman, M. (2010). Sensation Seeking. In I.B. Weiner and W.E. Craighead (Eds.) *The Corsini Encyclopedia of Psychology*. Hoboken: Wiley.

APPENDIX A
ONLINE ACCOMMODATION SURVEY

Accommodation Data

- 1) Accommodation Name:
- 2) Accommodation Location:
 - Province -
 - County -
 - District -
- 3) Accommodation Size (# of total available beds for guests):

Visitation and Infrastructure Questions

- 4) How has visitation to your accommodation changed over the 2007 – present day time period? (please select the best option)
 - Increased by more than 100% (more than doubled)
 - Increased by 50-100%
 - Increased by 25-50%
 - Increased by 0-25%
 - Has not changed
 - Decreased by 0-25%
 - Decreased by 25-50%
 - Decreased by more than 50%
- 5) In what ways has accommodation infrastructure changed from 2007 to present day? (please select all that apply)
 - Increase in buildings/rooms to accommodate visitors
 - Increase in facilities for employees (housing, offices, break rooms, etc.)
 - Increase in amenities offered to visitors (swimming pool, recreation center, etc.)
 - Increase in roads surrounding accommodation and in visited natural areas
 - Increase/advancement of accommodation utilities (water supply technology, sewage and waste technology, etc.)
 - Increase in the number of vehicles to transport visitors
 - Accommodation infrastructure has not changed
 - Accommodation infrastructure has decreased
- 6) If visitation has changed since 2007, what do you think are some potential reasons for the change in visitation? (please select all that apply)
 - Accommodation advertising
 - Rating on websites such as TripAdvisor
 - Tourism to Costa Rica has increased
 - Tourism to Costa Rica has decreased
 - Popularity of nature tourism and ecotourism has increased
 - Popularity of nature tourism and ecotourism has decreased
 - Costa Rican Tourism Institute's Certificate for Sustainable Tourism Program

- More travel options available to get to destination (more flights offered, more taxis/accommodation owned vehicles available to get to/from accommodation)
- More expensive to travel to destination
- Cheaper to travel to destination
- Other (If other, please list reason(s) here: _____)

Incentives for Certification Questions

- 7) Have you heard of the Costa Rican Tourism Institute's Certificate for Sustainable Tourism Program (CST)? (please select one option)
- Yes (continue with survey)
 - No (end of survey)
- 8) Are you currently certified under the Certificate for Sustainable Tourism program? (please select one option)
- Yes (answer Questions 9, 10, and 14)
 - No (skip to Questions 11, 12, 13, and 14)
- 9) What incentives offered under the Costa Rican Tourism Institute's Certificate for Sustainable Tourism Program (CST) influenced your decision to become certified? (please select all that apply)
- Advertising through CST materials (website, publications, directories, events)
 - Use of CST logo on promotional/advertising materials
 - Lodging priority for press trips
 - Technical, operation, and management advice provided through application process
 - Access and discounts to conferences, presentations, and fairs
 - Exposure to travel agencies/tourism suppliers
 - Increase sustainability, conservation practices, and community relations of accommodation
 - Increased respect and credibility in tourism industry
 - Other (If other, please list reason(s) here: _____)
- 10) Are you satisfied with the Costa Rican Tourism Institute's Certificate for Sustainable Tourism Program and the services it provides to you as a certified accommodation? (please select one option)
- Yes
 - No
- 11) What are some reasons your accommodation decided to not go through the Costa Rican Tourism Institute's Certificate for Sustainable Tourism Program (CST) certification process? (please select all that apply)
- Do not have the time needed to complete application process

- Do not want to be evaluated/audited
- Incentives offered through the CST are not good enough
- Do not want to be affiliated with the Costa Rican Tourism Institute or the Certificate for Sustainable Tourism Program
- No need to apply (business has not been impacted)
- Other (If other, please list reason(s) here: _____)

12) Is certification something that you are hoping to achieve at some point in the future? (please select one option)

- Yes
- No

13) If your accommodation was once certified but is not anymore, what were some reasons the accommodation decided to not be recertified? (please select all that apply)

- Re-certification process was too time consuming
- Incentives offered were not enough
- Did not like the way CST was operated/managed
- Certification was no longer seen as needed for accommodation success
- Did not pass the re-certification process
- Other (If other, please list reason(s) here: _____)

Please skip to Question 14 if you have never been certified.

14) Do you believe that the Costa Rican Tourism Institute's Certificate for Sustainable Tourism Program is effective in its mission of creating a sustainable ecotourism industry in Costa Rica? (please select one option)

- Yes
- No

15) Should the Costa Rican Tourism Institute's Certificate for Sustainable Tourism Program be more accessible to all ecotourism accommodations?

- Yes
- No

If yes, please continue to Question 16. If no, end of survey.

16) How can the Costa Rican Tourism Institute's Certificate for Sustainable Tourism Program (CST) be more accessible to all accommodations? (check all that apply)

- Decrease application requirements (reduce time needed to complete application)
- Decrease application/certification fee
- Decrease time between start of application and issue of certification
- Have separate applications depending on accommodation size (# of rooms)
- Offer help in completing application

- Increase incentives offered under the CST
- Other (If other, please list reason(s) here: _____)

APPENDIX B
SEMI-STRUCTURED INTERVIEW PROTOCOL

Background Questions

These first questions are mainly questions to get an idea of your personal background, your background in the tourism industry, and how you came to work at this particular accommodation.

1. Please state your name and your position at this accommodation
2. Tell me about your background
 - a. How long have you lived in this community?
 - b. If they have not lived in the community their whole life, ask what brought them to this community? Or possibly what brought them to Costa Rica?
 - c. Education (degree in hospitality or tourism?)
3. How did you get involved in the tourism/hotel industry?
 - a. When did they begin working in the tourism industry?
 - b. Have they always worked in accommodations?
 - c. What specific jobs have they had in the tourism industry?
 - d. Is all experience in Costa Rica?
4. Tell me about how you became interested in working at an ecotourism accommodation
5. How long have you worked at this particular accommodation? Tell me about your roles while working here, your current responsibilities, and your experiences working at this accommodation.

Accommodation Practices Questions

We have reached the next section of questions. These questions will ask you about your specific role at the accommodation, the other employees at the accommodation (no personal information on these other employees is requested or required), the accommodation's operation and management practices, guest amenities, and the Costa Rican Tourism Institute's Certificate for Sustainable Tourism program.

6. Please explain your daily routine working at this accommodation
 - a. Length of a typical work day
 - b. Expected tasks to accomplish
 - c. Do you encounter accommodation guests regularly?
 - d. Do you encounter other accommodation staff regularly?
7. How many employees does the accommodation have and what roles do the employees play in the operation of the accommodation? (Clarify that you do not want or need the names of the employees)
 - a. Roles of employees and number in each role
 - i. Cleaning staff
 - ii. Tour/Nature guides
 - iii. Receptionist
 - iv. Management
 - b. Are roles rigid or are employees expected to be able to perform tasks in all roles?
 - c. Do all employees come from the local community?
 - i. Can you give me a rough percentage of those that come from the local community?

8. What is the guest capacity of this accommodation?
9. What does a night at your accommodation cost on average?
 - a. What is the most common way that guests get to your accommodation?
 - i. Do you provide transportation?
 - b. Tell me about the ways in which you advertise to attract tourists
10. Tell me about the various amenities you offer guests at this accommodation
 - a. Are there individual cabins? Or one large building with multiple rooms?
 - b. What typically is provided to guests with their stay?
 - i. Free of charge?
 - ii. Additional cost?
 - c. What type of nature tours or experiences do you offer guests, if any?
 - i. Will ask for further details in later section
 - d. If no nature experiences are offered to guests by the accommodation, is there a tour operator in the community that you partner with?
11. Tell me about the ways in which your accommodation approaches sustainability and what sustainability means to the accommodation
 - a. Infrastructure
 - i. Solar panels
 - ii. Recycling
 - iii. Waste management
 - iv. Low-energy/usage fixtures (including electricity and water usage)
 - b. Community Initiatives
 - c. Environmental Practices/Initiatives
 - d. Involving tourists in sustainability efforts
12. Is your accommodation certified under the Costa Rican Tourism Institute's Certificate for Sustainable Tourism program?
13. Tell me about your thoughts on this program
 - a. If certified, what made you interested in becoming certified?
 - b. If uncertified, what are reasons you have chosen not to apply?
 - c. Do you think tourists pay attention to this certification program?
 - d. Can the program be improved? If so, how?

Changes in Visitation and Infrastructure Questions

Thank you for answers thus far, we have now come to the third section of questions. The next questions are in regards to your perceived changes in accommodation visitation and infrastructure. When I ask these questions, I am primarily going to be referring to the previous decade (2007-2017). If you have not worked here for that long, please do not worry, just answer the questions based on your own experiences and knowledge.

14. Tell me about the typical guest that stays at the accommodation
 - a. Average age?
 - b. Come as a group or alone?
 - c. Place of origin?
 - d. Activities interested in doing?
 - e. Length of stay?
15. Has this "typical guest" changed over the past decade? If so, how?

16. Tell me about current accommodation visitation
 - a. Months with highest occupancy
 - b. Months with lowest occupancy
 - c. Average annual occupancy rate
17. How has annual visitation changed over the past decade?
 - a. Increased or decreased?
 - b. Reasons why you think it has changed
 - i. General trends in Costa Rican tourism
 - ii. Accommodation advertising
 - iii. More competition in community
 - iv. Certified or uncertified
18. What are ways in which the accommodation is trying to attract tourists? Do you think these have been successful?
 - a. Types of advertising used
 - b. Social media use
 - c. Referrals/word of mouth
19. What amenities/infrastructure has the accommodation added within the past decade and what were the reasons for these additions?
 - a. Buildings
 - b. Guest rooms/capacity
 - c. Swimming pool
 - d. Nature Trails or Excursions
 - e. Gardens/Landscaping

Accommodation Community Interaction Questions

That was our last question in section three. The next section of questions will ask questions regarding the accommodation's interactions with local community members.

20. Tell me about the accommodation's relationship with the local community
 - a. Do you hire locally?
 - b. Are there any initiatives that the accommodation has started to give back to the community?
 - i. Education initiatives?
 - ii. Donations to community groups?
 - iii. Tourist-Community Interactions
 - c. Do you partner with any local businesses in the community?
21. When thinking about the community, what type of relationship are you trying to establish?
 - a. Is establishing a relationship important to the accommodation?
22. Do you think the accommodation's relationship with community members needs to be improved? If so, what are some ways in which you want to improve this relationship?

Accommodation Environment Interaction Questions

We are now at the last section of questions. These will ask about the accommodation's environmental practices and any conservation efforts that the accommodation is participating in.

23. Tell me about the different nature experiences you offer your guests. If you can please give as much detail as possible.
 - a. What can tourists participate in (specific activities)
 - b. How long are they gone (length of excursion)
 - c. Where do they go
 - i. Stay on accommodation grounds?
 - ii. Immediate surrounding areas?
 - iii. Transported to areas further away?
 - d. How are they transported
 - e. Are any specific sites/species targeted
24. Does the accommodation participate in any conservation initiatives? If so, tell me about them and how the accommodation participates
 - a. If the accommodation does participate, are the initiatives focused on one particular area in conservation? If so, what is it?
 - b. If the accommodation does not participate, is there a desire to participate?
25. Tell me about any changes in the surrounding environment that you have seen or heard about (maybe guests have told you things they did/did not see while on the excursions)
 - a. More infrastructure in the community
 - b. More people in the community
 - c. Land degradation/urbanization
 - d. Loss of species/biodiversity

Interview should end with this conclusion:

This concludes the questions I have prepared for this interview. Thank you for your time and for your willingness to participate in this interview, you have been extremely helpful in conducting my research.

If you have any final thoughts, something you want to add to one of the questions I have asked, or questions about the interview overall, I would be more than happy to continue the conversation with you.

APPENDIX C

IN-PERSON HOUSEHOLD LIVELIHOOD SURVEY

General Household Information

1. Household Location
 - a. Community: _____
 - b. District: _____
 - c. County: _____
 - d. State: _____
2. Respondent Information (Head of Household)
 - a. Age: _____
 - b. Sex: _____
 - i. 1 – Male
 - ii. 2 – Female
 - c. Marital Status: _____
 - i. 1 – Single
 - ii. 2 – Married
 - iii. 3 – Divorced/Separated/Widowed
 - d. Years Lived in Community: _____
3. Household Size by Age and Gender (# of People Living in Household) (Example: 1M, 2F)
 - a. Under 10 years old: _____
 - b. 10 – 18 years old: _____
 - c. 18 – 30 years old: _____
 - d. 30 – 50 years old: _____
 - e. Over 50 years old: _____
4. Education Level of Household Members (for all adult and teenage household members)
 - a. Informal Education Only: _____
 - b. Primary School: _____
 - c. Secondary School: _____
 - d. Higher Education: _____

Household Financial Income and Changes over Time

5. What is your source of income? (What do you do for a living?) _____

1 – Agriculture and Livestock	7 – Public Administration
2 – Manufacturing Industry	8 – Education and Health
3 - Construction	9 – Financial Or Insurance Institution
4 – Trade and Repair	10 – Communications
5 – Retail (Sale of Goods and Services)	11 – Pension/Remittance
6 – Hotels and Restaurants	12 – Other

6. Can you please specify what industry you work in?

7. What do the other household members do for a living? (“school” can be listed as an occupation) (respondent can pick from list above for each household member if desired)

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

8. What was your household’s total disposable income for 2017? _____

1 - <₱2,000,000	3 - ₱3,000,000 – 4,000,000	5 - ₱5,000,000 – 6,000,000
2 - ₱2,000,000 – 3,000,000	4 - ₱4,000,000 – 5,000,000	6 - >₱6,000,000

9. Are you able to save a percentage of this disposable income for future uses?

- a. 1 – Yes
 - i. If yes, can you give an approximate percentage of annual income saved? _____
- b. 2 – No

10. Comparing your annual disposable income now to a decade ago, how has it changed? _____

1 – Much worse (>50% less)	4 – Better (0-50% more)
2 – Worse (0-50% less)	5 – Much better (>50% more)
3 – About the same (no change)	6 – Doubled (>100% more)

11. Please indicate which of the following assets your household owns/possesses and the quantity of each:

Asset	Quantity
House (here or elsewhere)	
Land/Property (here or elsewhere) (in acres)	
Automobile	
Television	
Radio	
Computer	
Livestock (cattle/horses/goats/sheep)	
Poultry	

12. For you and your household, comparing your life today to a decade ago, how have the following components of your life changed?

1 – Much worse
2 – A little worse
3 – No change

4 – A little better
5 – Much better

Health	Financial Assets	Job Security	Sense of Personal Security	Happiness	Quality of Life

Changes in the Community

13. How has the population of the community changed over the past decade?

- _____
- a. 1 – Decreased by over 50%
 - b. 2 – Decreased by less than 50%
 - c. 3 – Has not changed
 - d. 4 – Increased by less than 50%
 - e. 5 – Increased by more than 50%

14. How has the ethnic diversity of the community’s population changed over the past decade? _____

- a. 1 – Ethnic diversity has decreased
- b. 2 – Ethnic diversity has not changed
- c. 3 – Ethnic diversity has increased

15. How has infrastructure or services available in the community changed over the past decade? Please fill out the below table.

1 – Does not exist
2 – Much worse
3 – A little worse
4 – Has not changed
5 – A little better
6 – Much better

Infrastructure/Service	Rating
Quality of Housing and Building Materials	
Potable Drinking Water	
Agriculture/Food Storage Facilities	
Irrigation Infrastructure	
Electricity	
Education System	
Health Services	
Technology (TV, phones, internet, etc.)	
Roads	

16. How has the availability of job opportunities in the community changed over the past decade? _____
- 1 – Decreased by more than 50%
 - 2 – Decreased by less than 50%
 - 3 – Has not changed
 - 4 – Increased by less than 50%
 - 5 – Increased by more than 50%
17. Have you noticed an increase in community conflict, violence, or crime?
- _____
- 1 – Yes
 - 2 – No

Opinions on Ecotourism Accommodations

18. How are ecotourism accommodations contributing to the community? (please feel free to select more than one option) _____
- 1 – Providing jobs to local community members
 - 2 – Improving community infrastructure
 - 3 – Aiding in community development
 - 3 – Creating/expanding markets or industries in the local economy
 - 4 – Creating educational and community involvement programs/opportunities
 - 4 – Are negatively impacting the community
 - If so, how: _____
19. Are there any particular ecotourism accommodations in the community that you believe are best helping the community and the environment? (please list up to three)
- _____
 - _____
 - _____
20. Are there any particular ecotourism accommodations in the community that you believe can improve in their contributions to the community and conservation? (please list up to three)
- _____
 - _____
 - _____

Free Response Questions (section will be audio recorded if time permits)

21. How have sources of income for your household changed over the past decade?
- More/less job opportunities
 - More/less household members working
 - Pay increases/decreases
22. How has the population of the community changed over the past decade?
- Population growth (increase or decrease)

- Ethnicity of population
 - Age structure of population
 - Immigration or emigration
 - Family size
23. How has the culture of the community changed over the past decade? (intended to be broad)
24. What are your hopes for your community when thinking about the next decade?

APPENDIX D

ARIZONA STATE UNIVERSITY IRB APPROVAL FORMS

EXEMPTION GRANTED

Dear Ann Kinzig:

On 7/26/2017 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Impacts of Ecotourism Certification on Accommodation Visitation and Infrastructure
Investigator:	Ann Kinzig
IRB ID:	STUDY00006566
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • Costa Rica Accommodation Reminder E-mail, Category: Recruitment Materials; • Kenya Accommodation Reminder E-mail, Category: Recruitment Materials; • Costa Rica_Accommodation E-mail Survey.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Accommodation Survey IRB Protocol, Category: IRB Protocol; • Costa Rica Accommodation Consent Form, Category: Consent Form; • Kenya_Accommodation E-mail Survey.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Kenya Accommodation Consent Form, Category: Consent Form;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 7/26/2017.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Ryan Davila

EXEMPTION GRANTED

Ann Kinzig
Life Sciences, School of (SOLS)
480/965-6838
Ann.Kinzig@asu.edu

Dear Ann Kinzig:

On 2/7/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Accommodation Management Opinions on Accommodation Visitation, Infrastructure, Practices, and the Certificate for Sustainable Tourism Program
Investigator:	Ann Kinzig
IRB ID:	STUDY00007712
Funding:	Name: SOLS - Graduate Programs; Name: Graduate College
Grant Title:	
Grant ID:	
Documents Reviewed:	<ul style="list-style-type: none">• Accommodation Management Interview Questions, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);• Interview Consent Form.pdf, Category: Consent Form;• Interview Recruitment E-mail.pdf, Category: Recruitment Materials;• Accommodation Interview IRB Protocol, Category: IRB Protocol;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 2/7/2018.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Ryan Davila

EXEMPTION GRANTED

Ann Kinzig
 Life Sciences, School of (SOLS)
 480/965-6838
 Ann.Kinzig@asu.edu

Dear Ann Kinzig:

On 3/28/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Household Livelihood and Biodiversity and Ecotourism Opinions Survey with Community Members in Costa Rica Communities
Investigator:	Ann Kinzig
IRB ID:	STUDY00008021
Funding:	Name: SOLS: Graduate Programs; Name: Graduate College (GRAD)
Grant Title:	
Grant ID:	
Documents Reviewed:	<ul style="list-style-type: none"> • ASU-Costa Rican Tourism Institute Agreement, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Household Survey Consent Form.pdf, Category: Consent Form; • Screen Shot 2018-03-22 at 3.54.44 PM.png, Category: Sponsor Attachment; • Ryan Davila_Household Survey IRB Protocol.docx, Category: IRB Protocol; • ASU Signed Version of the ASU ICT Agreement (Old Version), Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Screen Shot 2018-03-22 at 3.52.59 PM.png, Category: Sponsor Attachment; • Household Survey.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 3/28/2018.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Ryan Davila