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RESEARCH ARTICLE



Factors Influencing marine wildlife voluntourists' satisfaction and post-experience attitudes: evidence from Southern Africa

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ABSTRACT

Marine wildlife voluntourism (MVT) is a niche with potential that warrants research on the dynamics underpinning MVT experiences, to steer sustainable development. This study investigated influential factors in marine wildlife voluntourists' satisfaction and post-experience attitudes, through structural equation modelling (SEM). Southern Africa was the location of the research, given its growing popularity as an MVT destination and its need for marine conservation efforts. From June 2019 to June 2020, a questionnaire survey was administered to 142 tourists at three MVT organisations in South Africa, Mozambique and Madagascar. SEM identified ecocentric motivations and the perceived ethical conduct of MVT organisations as positively influencing satisfaction and post-experience attitudes towards education, the environment, compliance and advocacy, volunteering, citizen science, career choices, and paying for conservation. This study emphasised the importance of coupling the right tourist mindset with ethical roundness to make MVT a successful form of tourism with multiple direct and indirect benefits.

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ethical conduct;
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1. Introduction

Marine wildlife voluntourism (MVT) was born as an outlet for people to fulfil a desire to do more for marine ecosystems, species and science, as it involves organised volunteer activities that focus on marine species at a coastal destination while on holiday, where voluntourists use their time and money to assist in marine conservation (McGehee & Santos, 2005; Wearing, 2001). MVT encompasses voluntourists supporting and caring for marine ecosystems through monitoring marine species and the environment and collecting scientific data related to marine ecosystems (Gray et al., 2017). Organisations that offer MVT programmes are growing globally, resulting in more opportunities and destinations where MVT can take place (Gray & Campbell, 2007). Most of the programmes focus on charismatic fauna, such as turtles, sharks, whales, dolphins and coral reefs (Higham & Lück, 2007; Zeppel & Muloin, 2007).

If managed successfully, MVT can result in enormous benefits to the environment and voluntourists (Barbieri et al., 2012; Kitney et al., 2018; Ong et al., 2014; Roques et al.,

2018). Concerning benefits to the environment, Brondo (2015) argued that MVT can lead to long-term funding for conservation, or establishing marine protected areas. It is aligned with global marine environmental citizenship, whereby the voluntourists demonstrate care for the global marine environment (Bianchi & Stephenson, 2014). Marine voluntourists are also involved in marine environmental monitoring (Gray et al., 2017). Concerning benefits to voluntourists, Roques et al. (2018) found that MVT results in increased education and awareness. MVT has been demonstrated to increase environmental concern or continued participation in conservation-oriented activities (Schneller & Coburn, 2018). Increased volunteer satisfaction can also lead to enhanced self-awareness and personal growth of the voluntourist (Alexander, 2012b; Broad & Jenkins, 2009).

Based on the benefits outlined above, it is important to understand the mechanisms that can underpin the overall MVT experience and post-experience attitudes. In this context, the literature identifies voluntourists' motivations, expectations, and the perceived ethical conduct of an MVT organisation, as important factors. This study aimed to investigate these factors and their role in affecting satisfaction with destination and interactions, information and education, and overall MVT programme quality and post-experience attitudes in MVT, using a questionnaire survey targeting marine wildlife voluntourists in Southern Africa as a case study. The following sections provide a theoretical background and hypotheses for this study.

2. Background

2.1. *Motivations in marine wildlife voluntourism*

According to Dann (1981), tourism motivation is a significant attitude that encourages people to travel. Demographic variables, destination, specific species and activities could influence the motivation of wildlife tourists (Garcia-Soto et al., 2017). Grimm and Needham (2012) stated that voluntourism motivation includes external or internal reasons to visit a destination and participate in a volunteer activity. Authors such as Van Tonder et al. (2017) and Shum et al. (2021) described motivations in conservation-oriented voluntourism to encompass supporting conservation efforts (altruistic), gaining knowledge, experience and practical skills (self-development), and participating in a specific project due to personal interest in species and activities.

Moving specifically toward MVT, there are several important motivations. These can be grouped into ecocentric (wanting to contribute to the protection of marine species and habitats based on intrinsic rather than extrinsic values), personal development, personal well-being, and social values. The first group can encompass concern for marine animals and marine conservation (Bradford & Israel, 2004; Campbell & Smith, 2005); wanting to give back to a meaningful cause, such as animal conservation (Campbell & Smith, 2005; Kitney et al., 2018); and stewardship and bequest values (Cerrano et al., 2017). The second group can include interest in fields such as marine biology, ecology and conservation (Kitney et al., 2018); and wanting to gain experience and learn new skills also to contribute to career development (Bradford & Israel, 2004; Campbell & Smith, 2005; Roques et al., 2018). The third group can encompass wanting to improve one's self-esteem and sense of fulfilment, gain recognition in a community, and feel important

and useful (Carvache-Franco et al., 2019; Germann Molz, 2017; Lo & Lee, 2011). The last group can comprise concern for people who live in communities affected by marine issues (Bradford & Israel, 2004); wanting to enjoy new places and cultures (Campbell & Smith, 2005; Roques et al., 2018); and wanting to contribute to science (Cerrano et al., 2017).

Previous literature found that motivation factors could have significant relationships with satisfaction, attitude and behaviour (Mustonen, 2007). For example, in a study of nature conservation volunteers, Caissie and Halpenny (2003) found that motivations to contribute to nature conservation were associated with high levels of satisfaction with the volunteering experience. Similarly, Halpenny and Caissie (2003) showed that a desire to preserve nature as it should be was strongly driven by pro-nature and pro-environment motivations to partake in volunteering. Additionally, ecocentric marine tourists have a positive attitude toward the environment, are more willing to portray community activism behaviour, exhibit pro-environmental behaviours, and are willing to pay and spend more time on marine conservation activities (Ong & Musa, 2012). Based on the putative influence of motivations in MVT on post-experience elements like satisfaction and attitudes, the following hypotheses were formulated:

H1: Motivations to participate in MVT have a significant influence on satisfaction.

H2: Motivations to participate in MVT have a significant influence on post-experience attitudes.

2.2. Expectations and satisfaction in marine wildlife voluntourism

Previous research found that voluntourists have different expectations, focusing on trip attributes, creating positive change in their lives, increasing knowledge and skills, and enhancing self-awareness (Andereck et al., 2011; McDonald & Wilson, 2013). Gaining insight into the expectations of voluntourists can be useful in understanding their evaluation of the trip and in planning improvement in future offers (Andereck et al., 2011). Voluntourists' expectations can be used to design a product that would meet and exceed these expectations and result in an increase in satisfaction (Coghlan, 2007; Hammersley, 2014).

Voluntourism satisfaction can be divided into intrinsic (to help others without a reward) and extrinsic satisfaction (to help others and expect a reward, such as gaining skills and experience) (Ferreira et al., 2012). According to Polus and Bidder (2016), satisfaction could depend on whether the experience meets or exceeds the voluntourists' expectations. Previous research found that the satisfaction levels of voluntourists are impacted by the social interaction between hosts and guests, destination, information and education, a transformational experience, quality of the overall experience, and time dedicated to volunteer and other tourism activities, all of which are listed as important expectations of voluntourists (Andersen & Miller, 2006; Barbieri et al., 2012). In the context of MVT, additional expectations potentially influencing satisfaction include interactions with wildlife and charismatic species, and research activities (Huveneers et al., 2017; Wood & Coghlan, 2008).

Different satisfaction factors can influence voluntourists' attitudes and behaviour (Lee et al., 2014; Wu et al., 2017). High levels of satisfaction potentially enhance the

voluntourists' motivation, trust in the work of an organisation, future commitment, and behavioural intention to participate in MVT in the future (Han et al., 2019; Meng & Han, 2018; Polus & Bidder, 2016). Based on the above, the following hypotheses were formulated:

H3: Expectations in MVT have a significant influence on satisfaction.

H4: Satisfaction in MVT has a significant influence on post-experience attitudes.

2.3. Ethical conduct of marine wildlife voluntourism organisations

The ethical conduct of MVT organisations can have a large positive or negative impact on voluntourists' experiences, satisfaction and attitude (Gray & Campbell, 2007). Codes of conduct are essential as they can assist in the planning, implementation, and management of marine environments through MVT (Roques et al., 2018), and guarantee that ethical MVT takes place (Richards et al., 2015).

From a positive point of view, authors have indicated that, if done ethically, voluntourism could alleviate poverty, assist with the restoration of the environment and result in quality science when revolving around scientific activities (Goodwin, 2011; Wearing, 2001). Ethical roundness is achieved if the voluntourism organisation takes responsibility for managing its products and operations and encourages voluntourists to take the necessary steps for it to become sustainable (Goodwin, 2011). Organisations need to have and market their voluntary codes of practice and regulations, which would echo their ethical approach (Ong et al., 2013). This would impact the market structure of voluntourism, including the return of voluntourists (Smith & Font, 2014). Codes of conduct ensure that voluntourists acknowledge the impact that they have on the environment, increase education, enhance responsible behaviour, raise awareness, and manage voluntourists' expectations of a destination (Fermani et al., 2020).

From a negative point of view, authors have criticised voluntourism for being unethical and have indicated that voluntourism organisations may be profit-driven, overpromising benefits, harming the destinations and creating voluntourist dissatisfaction (Benson & Henderson, 2011; Smith & Font, 2014). Additionally, voluntourism, including MVT, has been accused of using greenwashing (where a company illustrates positive sustainability information but omits the negative information to create a positive image) and commodification of nature (the action of transforming a product or service into a commodity) to attract its market (Gray & Campbell, 2007). Greenwashing negatively influences voluntourists' attitudes and behaviour, resulting in scepticism and the quality of the tourism product decreasing (Smith & Font, 2014). Furthermore, voluntourists may experience an "ethical blind spot", where they want to act ethically, but also want to have a unique experience, even if it is unethical (Moorhouse et al., 2017).

Based on the important role and potential influence of ethical conduct in MVT on satisfaction and attitudes, the following hypotheses were formulated:

H5: The perceived ethical conduct of MVT organisations has a significant influence on satisfaction.

H6: The perceived ethical conduct of MVT organisations has a significant influence on post-experience attitudes.

2.4. *Post-experience attitudes in marine wildlife voluntourism*

MVT can have important impacts on voluntourists, including several positive post-experience attitudes towards education, environment, compliance and advocacy, volunteering, citizen science, career choices, and paying for conservation. Concerning education and the environment, participating in MVT activities can influence voluntourists' awareness, knowledge and understanding of marine conservation issues (Strzelecka et al., 2017). According to Schänzel and McIntosh (2000), education and interpretation programmes at nature-based tourism destinations have a severe impact on the voluntourists' attitude and behaviour concerning conservation as well as other aspects. Educational programmes in MVT can create emotional affinity towards the marine species involved, changing the attitudes of the voluntourists towards marine conservation (Andersen & Miller, 2006). Zeppel and Muloin (2007) found that the knowledge and experience that marine wildlife voluntourists obtain from the MVT programme increase their support for marine wildlife conservation, awareness and species protection. MVT can increase the voluntourists' skill development (Lyons et al., 2012; Wearing & McGehee, 2013), which allows them to build a new perspective on their life and marine conservation (Hindle et al., 2010). This can foster personal growth (Alexander, 2012a; Barbieri et al., 2012), which changes the way voluntourists view marine conservation (Broad & Jenkins, 2009). Concerning compliance and advocacy, voluntourists can become more environmentally conscious (Weaver, 2015), and acquire a more positive behaviour towards marine issues when participating in MVT (McGehee & Santos, 2005; McGehee, 2012). The confidence and self-awareness of the voluntourists can increase when they take part in MVT (Alexander, 2012b; Barbieri et al., 2012), empowering them to participate as advocates and opinion leaders in marine conservation matters (Johnson et al., 2014).

With regards to volunteering, previous research found that providing tourists with a memorable experience would result in positive post-purchase behaviour, which is crucial in managing voluntourism programmes; this could include loyalty, repeat visits and word of mouth (Zhang et al., 2018). Re-participation intention may or may not include return visits to the same organisation (Chua et al., 2021). Return visits could result in loyalty leading to stronger scientific contributions by voluntourists. Loyal voluntourists would contribute more time and finances to voluntourism, and recommend it to other potential voluntourists (Wisner et al., 2005). Work by Caissie and Halpenny (2003) also pointed out that conservation volunteers tend to form a sense of loyalty or attachment to a particular area, which is linked to a desire to leave a legacy through their efforts to protect nature and the environment in that specific area.

Concerning citizen science and career choices, MVT can improve the attitude of voluntourists toward marine science by increasing their knowledge, scientific thinking, and social learning (Johnson et al., 2014; Vann-Sander et al., 2016). According to Hicks (2016), wildlife-inspired experiences can influence which career people want to pursue. Volunteer activities with wildlife could launch people into a career that focuses on certain wildlife where they could express and learn special skills and knowledge (Roques et al., 2018). With regards to paying for conservation, some voluntourists become more inclined to financially support conservation and the protection of wildlife after their volunteering experiences (Campbell & Smith, 2005; Cárdenas & Lew, 2016; Lew, 2015).

Based on the above, the following post-experience attitudes were considered important to investigate within MVT: attitude towards education; attitude towards the environment; attitude towards compliance and advocacy; attitude towards volunteering; attitude towards citizen science; attitude towards career choices; and attitude towards paying for conservation.

3. Method

3.1. Research model

Based on the hypotheses formulated (H1-H6), a research framework was developed (Figure 1), including the following independent variables: motivations to participate in MVT, expectations in MVT, satisfaction in MVT, and perceived ethical conduct of MVT organisations. These were hypothesised to influence two dependent variables, namely satisfaction in MVT and post-experience attitudes.

3.2. Study location

This study formed part of a larger study segmenting MVT in Southern Africa from a demand and supply side perspective (Cilliers et al., 2022). Southern Africa is a hotspot and one of the top ten countries for MVT, with many voluntourists targeting the region to offer their services abroad (Alexander, 2012b; Van Tonder et al., 2017). Southern Africa has extensive coastlines spanning different latitudes and thus offers a variety of tourism opportunities in marine settings from cold-water ones to warm, tropical ones. Charismatic marine wildlife species such as turtles, sharks and dolphins are widespread in countries such as South Africa, Mozambique and Madagascar. This has led to the establishment and development of marine wildlife tourism in these countries (Geldenhuys et al., 2019; Roques et al., 2018). With challenges such as high global biodiversity loss and climate change, environmental conservation needs in these countries are also increasing greatly (Ringler et al., 2010). This has resulted, at least in part, in the support of MVT as part of marine wildlife tourism activities, as these could serve

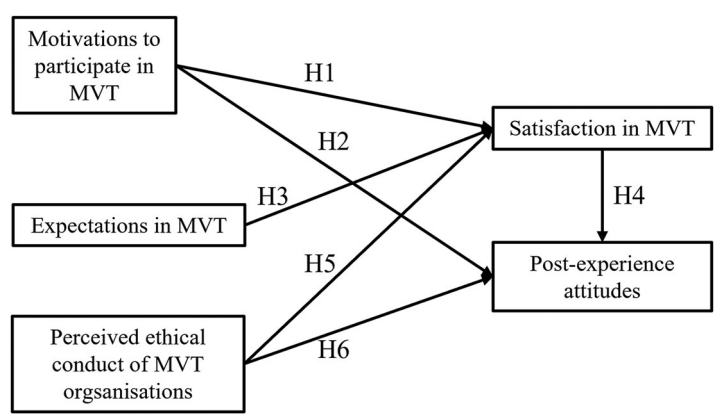


Figure 1. Research model and underlying hypotheses.

conservation purposes and endorse the achievement of sustainable development goals (Devereux & Holmes, 2018).

This study targeted MVT programmes in South Africa, Mozambique and Madagascar. These are the only countries in Southern Africa (with Seychelles) that host MVT projects (Volunteerworld.com, 2022). These countries require significant conservation and management efforts for marine habitats and species, given the extensive coastlines and diversity of marine species present (Greenan et al., 2018). They host charismatic and vulnerable marine wildlife species that move across trans-frontier boundaries (Sink et al., 2011). Finally, an understanding of the dynamics of MVT in these countries is still scant (Roques et al., 2018). An internet search performed in 2020 (before the onset of the COVID-19 pandemic) yielded an estimate of 33 MVT programmes offered in the chosen countries (20 in South Africa, six in Mozambique and seven in Madagascar). These programmes focused on charismatic, unique, vulnerable and conservation value-laden species like sharks, coral reefs, whales, sea turtles, dolphins, and sea birds. Voluntourists would participate in a variety of environmental, conservation, scientific and educational activities, such as scuba diving, collecting and capturing data, customer interaction, seamanship and boat activities, community work, monitoring and observing marine species, rehabilitation and releasing of marine animals, and coral farming.

3.3. Questionnaire structure

The data were collected using a structured questionnaire survey (Appendix A) targeting marine wildlife voluntourists visiting three MVT organisations, one in South Africa, one in Mozambique and one in Madagascar. The characteristics of the organisations are discussed later. The questionnaire contained a first section covering the socio-demographic background of the voluntourists. Five sections followed on motivations to participate in MVT (26 Likert-scale statements with 1 = not at all important to 5 = very important); expectations in MVT (17 Likert-scale statements with 1 = not at all important to 5 = very important); satisfaction in MVT (26 Likert-scale statements with 1 = totally dissatisfied to 5 = totally satisfied); perceived ethical conduct of MVT organisations (9 Likert-scale statements with 1 = strongly disagree to 5 = strongly agree); and post-experience attitudes towards education, the environment, compliance and advocacy, volunteering, citizen science, career choices, and paying for conservation (39 Likert-scale statements with 1 = strongly disagree to 5 = strongly agree). The statements included in the questionnaire were selected based on an extensive search of the literature on marine wildlife tourism, voluntourism and where available, MVT (Appendix A).

3.4. Sampling

The population under investigation included marine wildlife voluntourists at three MVT organisations, one in each country, which had been invited and agreed to participate in the study. The selection of organisations took place as follows. From the list of MVT organisations compiled for each country, approximately one-third of the organisations (13) offering a variety of activities with different types of marine wildlife were invited to participate in the study, with the expectation that several would not respond or

decline the invitation. Ultimately, three organisations, one per country, accepted to participate in this study. The South African organisation was located in Mossel Bay and focused on shark-based MVT. The Mozambique organisation was located in Ponta do Ouro (southern Mozambique) and focused on dolphin-based MVT. The Madagascar organisation was located in Nosy Be and focused on coral-reef-based MVT. The main characteristics of the organisations (vision, how many days they ask volunteers to stay, what they expect of their volunteers, code of conduct, and how they market themselves) are displayed in [Table 1](#).

Based on the average number of visiting marine voluntourists per year at the organisations, the population of voluntourists was estimated to be 184 and the appropriate sample size would be 163, with a 99% confidence level and 5% confidence interval. Sampling commenced in June 2019 and ended in June 2020. Before the onset of the COVID-19 pandemic, the researchers collected data in person in South Africa and Mozambique. After the pandemic started, voluntourists were reached online for Madagascar. Due to the small population size, convenience sampling was used to collect data from marine voluntourists at the organisations (Maree & Pietersen, 2019), with a final sample of 142 (59 in South Africa, 40 in Mozambique, and 43 in Madagascar).

3.5. Data analysis

Questionnaire data were analysed using the software Statsoft Statistica (Version 13.3, 2017), the Statistical Package for the Social Sciences (SPSS Version 25, 2017) and its module Analysis of Moment Structure (AMOS). The profile of the participants and their answers were first outlined using descriptive statistics (mean, standard deviation, standard error). Exploratory statistics including exploratory and confirmatory exploratory factor analyses (EFA and CEFA) and reliability tests were performed on the data to assess whether and which of the constructs in the research model had validity and internal consistency (Cronbach α) (Nunnally & Bernstein, 1994; Stevens, 2012). A priori factors were selected for CEFA on motivations (e.g. personal development), satisfaction (e.g. with overall programme quality), and post-experience attitudes (e.g. towards education), based on the literature on marine wildlife tourism and MVT (Nghah et al., 2021; Roques et al., 2018; Shum et al., 2021; Wood, 2010). Spearman's correlation analysis (r_s) was performed to highlight significant correlations between factors. The AMOS module was used to test the hypotheses in the research model (using the maximum likelihood estimation technique as recommended by Olsson et al., 2000) and perform structural equation modelling (SEM). The hypotheses were tested via separate models (Models 1-6).

4. Results

The socio-demographic background of the participants in this study is presented in [Table 2](#). The voluntourists were mainly females, 29 years old on average. Their origin was mainly Europe or North America. Most had a university degree in the environmental and biological sciences and were still studying. About half had previous MVT experience and had been involved in volunteering for four years on average. Their trip to the case study locations was 34 days long on average and cost an average of USD 108 per day.

Table 1. Main characteristics of the organisations studied and the voluntourism programmes they offer.

Country, location	Primary species of interest	Vision	Average duration of programme	Expectations towards voluntourists	Code of conduct	Main marketing strategy
South Africa, Mossel Bay	Sharks	To enable aspiring scientists and conservationists to work in conjunction with leading marine biologists as they undertake ground-breaking research on the charismatic marine mega-fauna of Southern Africa, including great white sharks.	1 month	Population assessments and trends of white sharks and marine mammals Assessment of habitat use and behaviour of white sharks and marine mammals Intertidal community assessment Surveys of plastic pollution Marine Mammal Stranding Response workshop Science Communication Course Get a SCUBA OWD, AOWD or RD certification Seamanship and crew in a research vessel Learn to deploy and operate Baited Remote Underwater Video (BRUV) equipment, Remote Operated Vehicles (ROV) and drones, to subsequently answer specific research questions through analysis of video data Gain experience in how to best maintain research boats and scientific equipment	Ensure the safety of all the participants in the programme Facilitate the easy running of the programme in general No tolerance for discrimination against persons based on their race, ethnicity, gender or sexual orientation A keen and willing attitude to work, whatever the task presented or requested Never do anything that you are not sure of since it could have dangerous and/or destructive effects Proper chum shifts No conditioning Stick to the rules Accommodating and helpful staff Exhaustive briefings	Official website, educational institutions, exhibitions, newsletter, social media
Mozambique, Ponta do Ouro	Dolphins	To share the wonder of coming face to face with wild and free dolphins, pioneering the way in ethical, educational and responsible practice for tours with dolphins. Volunteer stays and internships offer a unique opportunity for one to gain hands-on experience that focuses on marine mammals and ethical, responsible and educational tourism.	4 weeks	Gather data while snorkelling with wild dolphins Boat and in-water data capturing Land-based dolphin and whale observations Data entry and image cropping/cataloguing Dolphins of Ponta fin id & adoption project Preparation of info boards Educational orientation and preparation	Welcome and introduction to the species found Boat, snorkel and safety briefing Follow proper water entry and swim postures Adhere to a one-boat policy, follows a 20-minute viewing time and have experienced guides in the water Follow a two-drop, no touch, chase and dive down policy During peak season follow a one-	Official website, travel websites, newsletter, social media

Madagascar, Nosy Be	Coral	To stimulate local actions to protect coastal areas and reefs still not damaged and to recover those damaged around the world.	1 week	Marine animal stranding assistance Bone/skeleton preparation, cataloguing and reconstruction Tourist/lodge surveys Assist on dolphin snorkel tours and whale watching trips Learn about micro-plastic surveys, water sampling and beach clean-ups Social media and blog posts Scuba diving qualifications Use a globally standardised scientific protocol to collect underwater data to help define coral reef status Registration of data Verification test of data Laboratory work Coral identification	pod one-drop policy Approach animals calmly and slowly Rest time for dolphins between in-water encounters No swimming with newborn dolphins Avoid in-water encounters with whales No flash photography Advanced diving skills No handling of wildlife Pre-dive briefings Respectful behaviour towards volunteers, staff, and locals Proper buoyancy underwater and awareness of fin position Local community engagement Protection and enhancement of nature and the environment High-quality scientific data on the health of marine and coastal ecosystems to facilitate their management and protection Collection of useful information for Bodies that deal with the management of natural resources for the conservation of coastal marine ecosystems and related populations Contribute to the creation and maintenance of marine protected areas	University (marine biology students are recruited for the trips), official website, social media
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Table 2. Participants' profile (N = 142).

Variable	Categories	Values
Gender (%)	Male	31
	Female	69
Age (y)	Mean	29
	Median	25
	Min-max	18–68
	SD	9.32
	SE	0.781
Origin (%)	Africa	12
	Asia	3
	Australia	5
	Europe	47
	North America	33
	South America	0
Education (%)	School	31
	University	69
Subject of study (%)	EBS	82
	Other	18
Occupation (%)	Student	56
	Employed	36
	Unemployed	8
Profession (%)	EBS	45
	Other	55
Previous MVT experience (%)	No	57
	Yes	43
Time involved in volunteering (months)	Mean	48
	Median	36
	Min-max	1–240
	SD	53.55
	SE	5.775
Trip duration (days)	Mean	34
	Median	30
	Min-max	7–240
	SD	29.87
	SE	2.534
Spending per day (USD)	Mean	108
	Median	95
	Min-max	0–333
	SD	68.11
	SE	6.141

EBS = Environmental or biological sciences.

MVT = Marine voluntourism.

The results of EFA, CEFA and reliability tests on the items in the questionnaire are given in Table 3. There were a total of four motivation factors, three expectations factors, three satisfaction factors, one factor on the perceived ethical conduct of MVT organisations, and seven post-experience attitude factors. For the items in these factors, loadings exceeded the cut-off value of 0.40 in nearly all instances. Cronbach's alpha (α) values demonstrated good factors' reliability, above the threshold of 0.60 established by Nunnally and Bernstein (1994) except for one instance of post-experience attitude where the α was 0.52.

From Table 3, it can be seen that the respondents gave the most importance to eco-centric (wanting to contribute to the protection of marine species and habitats based on intrinsic rather than extrinsic values) and personal development motivations to participate in MVT, and most expected a good quality destination and good quality MVT programmes (educational quality, organisation, and training). Satisfaction was highest

Table 3. Results of exploratory or confirmatory exploratory factor analyses on motivations to participate in MVT, expectations in MVT, satisfaction in MVT, perceived ethical conduct of MVT organisations, and post-experience attitudes (N = 142).

Factor	Factor loading	Eigenvalue	Variance explained	Cronbach alpha (α)	Average factor score (mean ± SE)
^a Motivation 1: Ecocentric	0.45-0.85	4.13	52%	0.86	4.54 ± 0.04
^a Motivation 2: Personal development	0.59-0.82	2.67	53%	0.76	4.52 ± 0.05
^a Motivation 3: Personal well-being	0.49-0.84	3.24	46%	0.81	3.56 ± 0.06
^a Motivation 4: Social values	0.58-0.81	2.72	45%	0.75	3.46 ± 0.06
^a Expectation 1: Quality destination	0.32-0.80	2.58	43%	0.73	4.42 ± 0.04
^a Expectation 2: Overall programme quality	0.56-0.84	2.25	56%	0.72	3.83 ± 0.06
^a Expectation 3: Detailed information	0.64-0.83	3.23	54%	0.82	3.69 ± 0.05
^b Satisfaction 1: Information and education	0.65-0.81	3.41	57%	0.84	4.47 ± 0.04
^b Satisfaction 2: Overall programme quality	0.69-0.85	6.95	63%	0.94	4.33 ± 0.05
^b Satisfaction 3: Destination and interactions	0.54-0.76	3.35	42%	0.78	4.30 ± 0.05
^c Ethical 1: Ethical conduct of the organisation	0.66-0.80	4.52	56%	0.88	4.51 ± 0.04
^c Attitude 1: Compliance and advocacy	0.48-0.84	3.29	47%	0.81	4.68 ± 0.04
^c Attitude 2: Education	0.90-0.91	2.46	82%	0.89	4.62 ± 0.04
^c Attitude 3: Environment	0.39-0.93	3.36	67%	0.84	4.39 ± 0.04
^c Attitude 4: Citizen science	0.76-0.86	2.00	66%	0.74	4.37 ± 0.05
^c Attitude 5: Career choices	0.83-0.90	2.22	74%	0.82	4.20 ± 0.07
^c Attitude 6: Volunteering	0.63-0.81	1.61	54%	0.52	3.96 ± 0.06
^c Attitude 7: Paying for conservation	0.61-0.92	3.32	66%	0.87	3.96 ± 0.06

^aBased on scale of importance: 1 = not at all important, 2 = not important, 3 = neutral, 4 = important, and 5 = very important.

^bBased on scale of satisfaction: 1 = totally dissatisfied, 2 = dissatisfied, 3 = neutral, 4 = satisfied, and 5 = totally satisfied.

^cBased on scale of agreement: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

concerning information and education received, but also overall programme quality and destination and interactions. The voluntourists felt that the MVT organisations acted according to ethical standards. The post-trip experience attitude factors with the highest average scores included compliance and advocacy, education, environment, citizen science, and career choices.

The research hypotheses were tested via SEM. The factors considered in Models 1–6 were significantly correlated with one another, with correlation coefficients (r_s) ranging from 0.17–0.87. All models had a satisfactory fit (Table 4). The chi-square divided by the degrees of freedom was within the limits of 2.00 and 5.00 (Tabachnick & Fidell, 2007; Wheaton et al., 1977) for all models except Models 1, 3 and 6. The comparative fit index (CFI) was very close to 0.95 (Hu & Bentler, 1999) for all models. The root mean square error of approximation (RMSEA) was lower than the cut-off limit of 0.10 or close to it (Blunch, 2008). According to the standardised β -coefficients displayed in Table 5, it can be concluded that satisfaction in MVT was not significantly influenced by motivations to participate in MVT but by other factors, including expectations for overall MVT programme quality and the perceived ethical conduct of the MVT

Table 4. Goodness of fit values for SEM testing Models 1-8. CFI = Comparative fit index; RMSEA = Root mean square error of approximation.

Model	Hypothesis	Chi-square/df	CFI	RMSEA
Model 1	1	0.511	1.000	0.000
Model 2	2	4.522	0.840	0.158
Model 3	3	1.007	1.000	0.007
Model 4	4	3.723	0.902	0.139
Model 5	5	2.061	0.994	0.087
Model 6	6	5.486	0.854	0.178
Model 7	New	1.236	0.997	0.041
Model 8	New	3.799	0.879	0.141
Model 9	New	4.485	0.868	0.157

organisations, which had a positive influence. A new model (Model 7) tested the influence of expectations for MVT programme quality and the perceived ethical conduct of the MVT organisations on satisfaction and confirmed the significant influence of the latter but not the former. The post-experience attitudes of the participants in this study were significantly and positively influenced by ecocentric motivations

Table 5. Standardised regression weights (β -coefficients) for estimated structural models testing Models 1-8. MOT = Motivation to participate in MVT; SAT = Satisfaction with the MVT experience; ATT = Post-experience attitude; EXP = Expectation in MVT; ETH = Perceived ethical conduct of MVT organisations.

Independent variable		Outcome variable	Regression weight	P	Hypothesis/model accepted?
<i>H1 – Model 1</i>					No
MOT1	→	SAT	0.11	0.35	
MOT2	→	SAT	0.09	0.42	
MOT3	→	SAT	0.17	0.14	
MOT4	→	SAT	−0.01	0.94	
<i>H2 – Model 2</i>					Partly
MOT1	→	ATT	0.52	***	
MOT2	→	ATT	0.13	0.18	
MOT3	→	ATT	0.10	0.30	
MOT4	→	ATT	−0.01	0.96	
<i>H3 – Model 3</i>					Partly
EXP1	→	SAT	−0.06	0.47	
EXP2	→	SAT	0.29	**	
EXP3	→	SAT	1.00	0.31	
<i>H4 – Model 4</i>					Partly
SAT1	→	ATT	0.36	*	
SAT2	→	ATT	−0.07	0.68	
SAT3	→	ATT	0.21	0.09	
<i>H5 – Model 5</i>					Yes
ETH1	→	SAT	0.60	***	
<i>H6 – Model 6</i>					Yes
ETH1	→	ATT	0.65	***	
<i>New – Model 7</i>					Partly
EXP2	→	SAT	0.01	0.88	
ETH1	→	SAT	0.60	***	
<i>New – Model 8</i>					Partly
MOT1	→	ATT	0.52	***	
SAT1	→	ATT	0.12	0.83	
ETH1	→	ATT	0.52	***	
<i>New – Model 9</i>					Yes
MOT1	→	ATT	0.53	***	
ETH1	→	ATT	0.53	***	

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

to participate in MVT, satisfaction with information and education received during the experience and the perceived ethical conduct of the MVT organisations. A new model (Model 8) tested the influence of ecocentric motivations, satisfaction with information and education received, and perceived ethical conduct of the MVT organisations, on post-experience attitudes. The test excluded the significant influence of satisfaction, and a final model (Model 9) confirmed the significant positive influence of ecocentric motivations and the perceived ethical conduct of the MVT organisations on post-experience attitudes.

5. Discussion

This study aimed to investigate mechanisms underpinning MVT experiences, with a focus on motivations, expectations, satisfaction, the perceived ethical conduct of MVT organisations, and post-experience attitudes. Southern Africa was selected as the case study location for the research, as it characterises one of the most relevant regions for MVT globally. The results confirm in part the key attributes of voluntourists, marine wildlife tourists, and marine wildlife voluntourists, but especially highlighted the role that some factors play in influencing MVT experiences including satisfaction and post-experience attitudes. These influential relationships warrant consideration in terms of MVT management.

The socio-demographic background of the participants reflects depictions of marine wildlife voluntourists provided in the literature (Roques et al., 2018; Shum et al., 2021). Marine wildlife voluntourists were mainly females in their late twenties, educated in the environmental and biological sciences, had a positive disposition towards the fields covered during MVT activities, and were committed to MVT based on previous experiences and the duration and cost of their trips. The results of the factor analyses show that the participants were mostly motivated by ecocentric and personal development reasons to partake in MVT. This outcome confirms accounts concerning conservation-oriented voluntourism including MVT, which elaborated on the role of altruistic and self-development motives (Bradford & Israel, 2004; Campbell & Smith, 2005; Kitney et al., 2018; Shum et al., 2021; Van Tonder et al., 2017).

The participants' expectations primarily focused on the quality of the destination and the MVT programme offered, mirroring the findings of authors discussing the centrality of MVT as a rounded experience offering self-development opportunities in a quality setting (Andereck et al., 2011; McDonald & Wilson, 2013). The results also showed that these expectations were met, as the participants were most satisfied with the destination, the MVT programme and its core characteristics such as education, training and activities revolving around wildlife. Notably, satisfaction tended to be extrinsic (voluntourists were able to help in exchange for a reward, such as gaining skills and experience), confirming the tight connection between ecocentric and self-development motives to participate in MVT (wanting to contribute to conservation through research while gaining skills and knowledge) (Ferreira et al., 2012). All the activities offered by the MVT organisations studied formed part of the voluntourists' motivations, expectations and satisfaction. For example, voluntourists wanted to have experiences where they could contribute to marine conservation, learn about marine life, participate in scientific research and interact with the local community. Importantly, the results of this study

suggest that the value proposition was characterised by unique and memorable experiences that met the tourists' expectations. According to Wood and Zeppel (2008), marine wildlife voluntourists are interested in marine exploration, marine discovery, learning from experienced researchers, social interaction, fun and skills development. These interests ought to be met through the activities offered by the organisation. Benson and Henderson (2011) found that voluntourism organisations that offer a wider range of key activities are more likely to be successful.

In this study, the participants were convinced that the MVT organisations they visited acted according to ethical standards, suggesting that the organisations appreciated the value of ethical roundness to conduct sound marine wildlife research and conservation while positively involving people (Fermani et al., 2020; Richards et al., 2015; Roques et al., 2018). This perspective is central to the discussion of the perceived ethical conduct of MVT organisations, which will follow.

Results on post-experience attitudes show that some attitudes stood out, specifically towards pro-environmental and pro-conservation behaviour, education, advocacy, science and career choices. These are aligned with accounts that MVT experiences can increase environmental and conservation awareness, improve behavioural intentions to support conservation and act responsibly towards the environment, empower tourists to act as advocates for conservation, and stimulate positive perceptions of science as well as specific careers (e.g. science, conservation, education) (Andersen & Miller, 2006; Hicks, 2016; Johnson et al., 2014; Strzelecka et al., 2017; Weaver, 2015).

The result of SEM revealed critical factors which influenced marine voluntourists' satisfaction and post-experience attitudes in MVT. Specifically, satisfaction was influenced by expectations for the overall MVT programme quality, and the perceived ethical conduct of the MVT organisations, while post-experience attitudes were influenced by ecocentric motivations, satisfaction with education and information received, and the perceived ethical conduct of the MVT organisations. However, further models showed that ultimately, the perceived ethical conduct of MVT organisations had a central role in determining satisfaction and post-experience attitudes, with the latter also being influenced by ecocentric motivations. Thus, it can be concluded that satisfaction and post-experience attitudes are critically tied to two elements, namely the reasons why marine voluntourists approach MVT, and the way MVT organisations are perceived to conduct themselves. The results support research showing that ecocentric motivations to partake in marine wildlife tourism, which includes MVT, can positively affect post-trip attitudes towards the environment, conservation, science and voluntourism (Ong & Musa, 2012). Additionally, the ethical conduct of wildlife tourism organisations including MVT ones is central to promoting the same positive outcomes among tourists (Gray & Campbell, 2007).

5.1. Study implications

There are several implications for MVT marketing and management, research, and marine conservation, which are summarised in Figure 2. These ought to be considered given two important findings of this study. First, tourists are drawn to MVT mainly by ecocentric and self-development motives. Second, the ethical conduct of MVT organisations is central to delivering quality experiences to tourists and capable of shaping

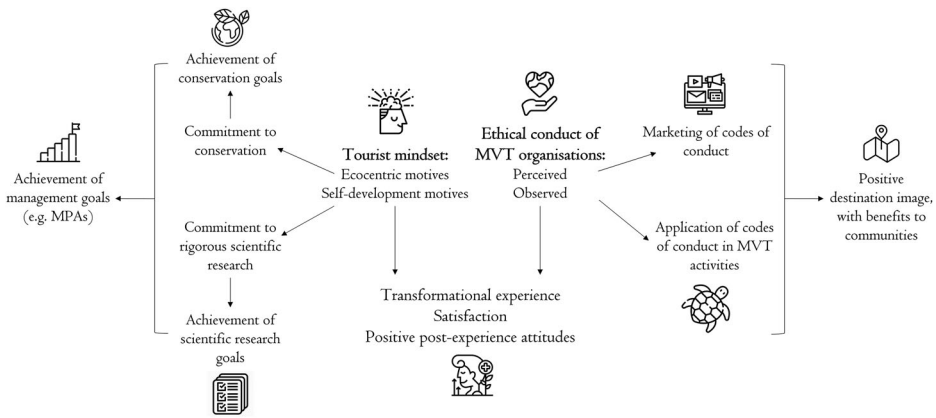


Figure 2. Conceptual diagram of the implications of this study. MVT = marine wildlife voluntourism; MPA = marine protected area.

important post-experience attitudes that can be beneficial both in and out of the MVT context. Concerning the first finding, it is understood that MVT aims to attract people who desire to learn and develop while contributing to conservation and research. These features are critical to ensure the success of MVT programmes, for example, knowing that ecocentric people will be committed to conservation activities and a conservation cause and that a desire for self-development will drive tourists to properly apply themselves in activities like monitoring and data collection. MVT organisations aim to achieve important conservation and scientific goals (Roques et al., 2018), and this necessitates the right tourist mindset.

This concept is tightly connected to the ethical conduct of MVT organisations, which are often accused of using practices like greenwashing to “sell” MVT to the potential market (Gray & Campbell, 2007). Therefore, the success of MVT will be greatly dependent on the conduct of organisations and the right tourist mindset, which together, can result in positive outcomes for conservation and science. It must be noted that the scientific community is often sceptical about scientific research that is based on the participation of volunteers and tourists, namely citizen science (Jarvis et al., 2015). This makes the ethical roundness of MVT organisations and the commitment of tourists to making a sound scientific contribution the more important. MVT marketing needs to contain messages that are centred on the organisation’s code of conduct, the integrity of activities and the way that scientific data would be used for science and conservation. The code of conduct ought to be transparently expressed during the management of activities so that tourists can have transformational experiences resulting in positive post-trip behavioural intentions. Ethical roundness would not only benefit wildlife species, research and tourists but also have positive effects on the management of local marine environments, particularly in situations including marine protected areas in developing countries, necessitating resources to improve management. Ultimately, the reputation of MVT organisations can result in tourists’ loyalty and reflect positively on the hosting communities, which can be supported through employment and participation. It may be argued that MVT should be marketed broadly to attract a larger pool of tourists, possibly without the risk of massification, given the demands of this

type of tourism in terms of time and money. MVT can be marketed to motivated tourists of different financial backgrounds, to ensure inclusivity and opportunities for a diversified pool of tourists. Naturally, the financial viability of MVT organisations remains essential, however, key partners such as research institutions can assist in providing financial assistance to organisations and potential participants, for example through internship bursaries.

6. Conclusion

This study aimed to assess factors of influence on satisfaction and post-experience attitudes in MVT. The results clearly show that motivations to participate in MVT and the perceived ethical conduct of MVT organisations play a critical influential role. This information can support plans to improve the marketing and management of MVT anywhere. The Southern African case study offers a perspective which can be useful in enhancing MVT as a sustainable tourism offering in developing countries, where marine conservation is paramount and resources for research, management and conservation can be limited, calling for external contributions that can manifest themselves in the form of MVT. The development of MVT necessitates an understanding that ethical roundness and the right tourist mindset constitute a foundation for successful marine wildlife conservation. However, MVT organisations require the support of key partners such as research entities and managing bodies, to make a proper contribution. This study presents some limitations to be considered in future research. The selection of the Southern African case study could have resulted in difficulties in generalising the results of this study. The study took place before the onset of the COVID-19 pandemic, which resulted in significant changes to global tourism including voluntourism. Therefore, future research could focus on evaluating the post-pandemic trends in MVT, including challenges and resilience strategies. This study was based on convenience and not random sampling, which could have caused some bias in the final data. Last, this study was based on the perspective of tourists, the subjectivity of which could have resulted in some of the data, for example on ethical conduct, being positively deviated. While the researchers were involved in the observation of MVT activities to see whether codes of conduct were followed, future research could consider validating demand- and supply-side perspectives through deeper assessments of MVT programmes on different levels from marketing to actions on the ground and post-experience feedback.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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References

- Alexander, Z. (2012a). International volunteer tourism experience in South Africa: An investigation into the impact on the tourist. *Journal of Hospitality Marketing and Management*, 21 (7), 779–799. <https://doi.org/10.1080/19368623.2012.637287>
- Alexander, Z. (2012b). The impact of a volunteer tourism experience, in South Africa, on the tourist: The influence of age, gender, project type and length of stay. *Tourism Management Perspective*, 4, 119–126. <https://doi.org/10.1016/j.tmp.2012.07.002>
- Andereck, K., McGehee, N., Lee, S., & Clemmons, D. (2011). Experience expectations of prospective volunteer tourists. *Journal of Travel Research*, 51(2), 130–141. <https://doi.org/10.1177/0047287511400610>
- Andersen, M. S., & Miller, M. L. (2006). Onboard marine environmental education: Whale watching in the San Juan islands, Washington. *Tourism in Marine Environments*, 2(2), 111–118. <https://doi.org/10.3727/154427306779436327>
- Barbieri, C., Santos, C. A., & Katsube, Y. (2012). Volunteer tourism: On-the-ground observations from Rwanda. *Tourism Management*, 33(3), 509–516.
- Benson, A. M., & Henderson, S. (2011). A strategic analysis of volunteer tourism organisations. *The Service Industries Journal*, 31(3), 405–424. <https://doi.org/10.1080/02642060902822091>
- Bianchi, R. V., & Stephenson, M. L. (2014). *Tourism and citizenship: Rights, freedoms and responsibilities in the global order*. Routledge.
- Blunch, N. J. (2008). *Introduction to structural equation modelling using SPSS and AMOS*. Sage.
- Bradford, B. M., & Israel, G. F. (2004). Evaluating volunteer motivation for sea turtle conservation in Florida. *EDIS*, 2004(8). AEC 372/WC053, 5/2004.
- Broad, S., & Jenkins, J. (2009). Gibbons in their midst? Conservation volunteers' motivations at the gibbon rehabilitation project, Phuket, Thailand. In K. Lyons, & S. Wearing (Eds.), *Journeys of discovery in volunteer tourism international case study perspectives* (pp. 72–85). CABI.
- Brondo, K. V. (2015). The spectacle of saving: Conservation voluntourism and the new neoliberal economy on Utila Honduras. *Journal of Sustainable Tourism*, 23(10), 1405–1425. <https://doi.org/10.1080/09669582.2015.1047377>

- Caissie, L. T., & Halpenny, E. A. (2003). Volunteering for nature: Motivations for participating in a biodiversity conservation volunteer program. *World Leisure Journal*, 45(2), 38–50. <https://doi.org/10.1080/04419057.2003.9674315>
- Campbell, L.M. & Smith, C. 2005. Volunteering for sea turtles? Characteristics and motives of volunteers working with the Caribbean conservation corporation in tortuguero. *Costa Rica Mast*, 3 (2) & 4(1):169–193.
- Cárdenas, S. A., & Lew, D. K. (2016). Factors influencing willingness to donate to marine endangered species recovery in the galapagos national park, Ecuador. *Frontiers in Marine Science*, 3 (60), 1–14.
- Carvache-Franco, M., Carvache-Franco, W., Contreras-Moscol, D., Andrade-Alcivar, L., & Carvache-Franco, O. (2019). Motivations and satisfaction of volunteer tourism for the development of a destination. *GeoJournal of Tourism and Geosites*, 26(3), 714–725. <https://doi.org/10.30892/gtg.26303-391>
- Cerrano, C., Milanese, M., & Ponti, M. (2017). Diving for science-science for diving: Volunteer scuba divers support science and conservation in the Mediterranean Sea. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 27(2), 303–323. <https://doi.org/10.1002/aqc.2663>
- Chua, B. L., Meng, B., Ryu, H. B., & Han, H. (2021). Participate in volunteer tourism again? Effect of volunteering value on temporal re-participation intention. *Journal of Hospitality and Tourism Management*, 46, 193–204. <https://doi.org/10.1016/j.jhtm.2020.12.003>
- Cilliers, C.D., Lucrezi, S., & van der Merwe, P. 2022. Assessing demand and supply perspectives in marine wildlife voluntourism: A case of Southern Africa. *African Journal of Hospitality, Tourism and Leisure*, 11(2):827–842.
- Coghlan, A. (2007). Towards an integrated image-based typology of volunteer tourism organisations. *Journal of Sustainable Tourism*, 15(3), 267–287. <https://doi.org/10.2167/jost628.0>
- Dann, G. M. S. (1981). Tourist motivation an appraisal. *Annals of Tourism Research*, 8(2), 187–219. [https://doi.org/10.1016/0160-7383\(81\)90082-7](https://doi.org/10.1016/0160-7383(81)90082-7)
- Devereux, P., & Holmes, K. (2018). Voluntourism and the sustainable development goals. In D. J. Liburd, & D. D. Edwards (Eds.), *Collaboration for sustainable tourism development* (pp. 93–111). Goodfellow Publishers.
- Fermani, A., Sergi, M. R., Carrieri, A., Crespi, I., Picconi, L., & Saggino, A. (2020). Sustainable tourism and facilities preferences: The sustainable tourist stay scale (STSS) validation. *Sustainability*, 12(22), 1–14. <https://doi.org/10.3390/su12229767>
- Ferreira, M. R., Proença, T., & Proença, J. F. (2012). Motivations which influence volunteers' satisfaction". In *10th international conference of the International Society for Third Sector Research*. 1–24.
- Garcia-Soto, C., Van der Meeren, G. I., Busch, J. A., Delany, J., Domegan, C., Dubsky, K., Fauville, G., Gorsky, G., von Juterzenka, K., Malfatti, F., Mannaerts, G., McHugh, P., Monestiez, P., Seys, J., Węśławski, J. M., & Zielinski, O. (2017). *Advancing citizen science for coastal and ocean research*. Position Paper 23 of the European Marine Board, Ostend, Belgium.
- Geldenhuys, L., Van der Merwe, P., & Saayman, M. (2019). Determining the market for marine wildlife tourism in South Africa. *African Journal of Hospitality, Tourism and Leisure*, 8(4), 1–18.
- Germann Molz, J. (2017). Giving back, doing good, feeling global: The affective flows of family voluntourism. *Journal of Contemporary Ethnography*, 46(3), 334–360. <https://doi.org/10.1177/0891241615610382>
- Goodwin, H. (2011). *Taking responsibility for tourism*. Goodfellow Publishers.
- Gray, N. J., & Campbell, L. M. (2007). A decommodified experience? Exploring aesthetic, economic and ethical values for volunteer ecotourism in Costa Rica. *Journal of Sustainable Tourism*, 15(5), 463–482. <https://doi.org/10.2167/jost725.0>
- Gray, N. J., Meeker, A., Ravensbergen, S., Kipp, A., & Faulkner, J. (2017). Producing science and global citizenship? Volunteer tourism and conservation in Belize. *Tourism Recreation Research*, 42(2), 199–211. <https://doi.org/10.1080/02508281.2017.1300398>

- Greenan, T. M., Griffiths, C. L., & Santamaria, C. A. (2018). Molecular approaches uncover cryptic diversity in intertidal ligia isopods (crustacea, isopoda, ligiidae) across the Southern Africa coastline. *Peer Journal*, 6, 1–19. <https://doi.org/10.7717/peerj.4658>
- Grimm, K. E., & Needham, M. D. (2012). Moving beyond the “I” in motivation: Attributes and perceptions of conservation volunteer tourists. *Journal of Travel Research*, 51(4), 488–501. <https://doi.org/10.1177/0047287511418367>
- Halpenny, E. A., & Caissie, L. T. (2003). Volunteering on nature conservation projects: Volunteer experience, attitudes and values. *Tourism Recreation Research*, 28(3), 25–33. <https://doi.org/10.1080/02508281.2003.11081414>
- Hammersley, L. A. (2014). Volunteer tourism: Building effective relationships of understanding. *Journal of Sustainable Tourism*, 22(6), 855–873. <https://doi.org/10.1080/09669582.2013.839691>
- Han, H., Meng, B., Chua, B. L., Ryu, H. B., & Kim, W. (2019). International volunteer tourism and youth travelers – an emerging tourism trend. *Journal of Travel & Tourism Marketing*, 3(5), 549–562. <https://doi.org/10.1080/10548408.2019.1590293>
- Hicks, J. R. (2016). *Wildlife-inspired awe in leisure-based learning*. Doctoral dissertation, University of Illinois at Urbana-Champaign.
- Higham, J. E. S., & Lück, M. (2007). Marine wildlife and tourism management: In search of scientific approaches to sustainability. In J. E. S. Higham, & M. Lück (Eds.), *Marine wildlife and tourism management: Insights from the natural and social sciences* (pp. 1–16). Cabi Publications.
- Hindle, C., Cavalieri, N., Collison, R., Miller, K., & Richard, M. (2010). *Volunteer: A traveller's guide to making difference around the world*. Lonely Planet Publications Pty Ltd.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Model*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Huveneers, C., Meekan, M. G., Apps, K., Ferreira, L. C., Pannell, D., & Vianna, G. M. (2017). The economic value of shark-diving tourism in Australia. *Reviews in Fish Biology and Fisheries*, 27(3), 665–680. <https://doi.org/10.1007/s11160-017-9486-x>
- Jarvis, R. M., Breen, B. B., Krägeloh, C. U., & Billington, D. R. (2015). Citizen science and the power of public participation in marine spatial planning. *Marine Policy*, 57, 21–26. <https://doi.org/10.1016/j.marpol.2015.03.011>
- Johnson, M. F., Hannah, C., Acton, L., Popovici, R., Karanth, K. K., & Weinthal, E. (2014). Network environmentalism: Citizen scientists as agents for environmental advocacy. *Global Environmental Change*, 29, 235–245. <https://doi.org/10.1016/j.gloenvcha.2014.10.006>
- Kitney, S., Stanway, A. R., & Ryan, M. M. (2018). Volunteer tourism motivations of the marine conservation Cambodia project. *Current Issues in Tourism*, 21(10), 1091–1096. <https://doi.org/10.1080/13683500.2016.1269727>
- Lee, C. K., Reisinger, Y., Kim, M. J., & Yoon, S. M. (2014). The influence of volunteer motivation on satisfaction, attitudes, and support for a mega-event. *International Journal of Hospitality Management*, 40, 37–48. <https://doi.org/10.1016/j.ijhm.2014.03.003>
- Lew, D. K. (2015). Willingness to pay for threatened and endangered marine species: A review of the literature and prospects for policy use. *Frontiers in Marine Science*, 2(96), 1–17.
- Lo, A. S., & Lee, C. Y. (2011). Motivations and perceived value of volunteer tourists from Hong Kong. *Tourism Management*, 32(2), 326–334. <https://doi.org/10.1016/j.tourman.2010.03.002>
- Lyons, K., Hanley, J., Wearing, S., & Neil, J. (2012). Gap year volunteer tourism: Myths of global citizenship? *Annals of Tourism Research*, 39(1), 361–378. <https://doi.org/10.1016/j.annals.2011.04.016>
- Maree, K., & Pietersen, J. (2019). Sampling. In K. Maree (Ed.), *First steps in research*. 3rd ed (pp. 213–224). Van Schaik publishers.
- McDonald, M., & Wilson, J. (2013). Volunteer tourism: An existential perspective. In S. Wearing, & N. G. McGehee (Eds.), *International volunteer tourism: Research, theory, and practice* (pp. 105–115). CABI.
- McGehee, N. G. (2012). Oppression, emancipation, and volunteer tourism: Research propositions. *Annals of Tourism Research*, 39(1), 84–107. <https://doi.org/10.1016/j.annals.2011.05.001>

- McGehee, N. G., & Santos, C. A. (2005). Social change, discourse and volunteer tourism. *Annals of Tourism Research*, 32(3), 760–779. <https://doi.org/10.1016/j.annals.2004.12.002>
- Meng, B., & Han, H. (2018). Working-holiday tourism attributes and satisfaction in forming word-of-mouth and revisit intentions: Impact of quantity and quality of intergroup contact. *Journal of Destination Marketing & Management*, 9, 347–357. <https://doi.org/10.1016/j.jdmm.2018.03.009>
- Moorhouse, T., D'Cruze, N. C., & Macdonald, D. W. (2017). Unethical use of wildlife in tourism: What's the problem, who is responsible, and what can be done? *Journal of Sustainable Tourism*, 25(4), 505–516. <https://doi.org/10.1080/09669582.2016.1223087>
- Mustonen, P. (2007). Volunteer tourism-altruism or mere tourism? *Anatolia*, 18(1), 97–115. <https://doi.org/10.1080/13032917.2007.9687038>
- Ngah, N. S., Abdullah, N. L., & Mohd Suki, N. (2021). Servant leadership, volunteer retention, and organizational citizenship behavior in nonprofit organizations: Examining the mediating role of job satisfaction. *Nonprofit and Voluntary Sector Quarterly*. <https://doi.org/10.1177/08997640211057409>
- Nunnally, B., & Bernstein, I. R. (1994). *Psychometric theory*. Oxford University.
- Olsson, U. H., Foss, T., Troye, S. V., & Howell, R. D. (2000). The performance of ML, GLS, and WLS estimation in structural equation modeling under conditions of misspecification and non-normality. *Structural Equation Modeling*, 7(4), 557–595. https://doi.org/10.1207/S15328007SEM0704_3
- Ong, F., Lockstone-Binney, L., King, B., & Smith, K. A. (2014). The future of volunteer tourism in the Asia-Pacific region: Alternative prospects. *Journal of Travel Research*, 53(6), 680–692. <https://doi.org/10.1177/0047287514532365>
- Ong, F., & Musa, G. (2012). SCUBA divers' underwater responsible behaviour: Can environmental concern and divers' attitude make a difference? *Current Issues in Tourism*, 15(4), 329–351. <https://doi.org/10.1080/13683500.2011.604407>
- Ong, F., Pearlman, M., Lockstone-Binney, L., & King, B. (2013). Virtuous volunteer tourism: Towards a uniform code of conduct. *Annals of Leisure Research*, 16(1), 72–86. <https://doi.org/10.1080/11745398.2013.769402>
- Polus, R. C., & Bidder, C. (2016). Volunteer tourists' motivation and satisfaction: A case of batu puteh village kinabatangan borneo. *Procedia – Social and Behavioral Sciences*, 224, 308–316. <https://doi.org/10.1016/j.sbspro.2016.05.490>
- Richards, K., O'Leary, B. C., Roberts, C. N., Ormond, R., Gore, M., & Hawkins, J. P. (2015). Sharks and people: Insight into the global practices of tourism operators and their attitudes to shark behaviour. *Marine Pollution Bulletin*, 91(1), 200–210. <https://doi.org/10.1016/j.marpolbul.2014.12.004>
- Ringler, C., Zhu, T., Cai, X., Koo, J., & Wang, D. (2010). *Climate change impacts on food security in Sub-Saharan Africa: Insights from comprehensive climate change scenarios. Technical report 1042*. International Food Policy Research Institute.
- Roques, K. G., Jacobson, S. K., & McCleery, R. A. (2018). Assessing contributions of volunteer tourism to ecosystem research and conservation in Southern Africa. *Ecosystem Service*, 30, 382–390. <https://doi.org/10.1016/j.ecoser.2017.12.014>
- Schänzel, H. A., & McIntosh, A. J. (2000). An insight into the personal and emotive context of wildlife viewing at the penguin place, otago peninsula. *New Zealand. Journal of Sustainable Tourism*, 8(1), 36–52. <https://doi.org/10.1080/09669580008667348>
- Schneller, A. J., & Coburn, S. (2018). For-profit environmental voluntourism in Costa Rica: Teen volunteer, host community, and environmental outcomes. *Journal of Sustainable Tourism*, 26(5), 832–851.
- Shum, E., Benham, C., Jones, K., & Ariel, E. (2021). Understanding people who volunteer with marine turtles: Motives and values for engagement in conservation. *Human Dimensions of Wildlife*, 1–19. <https://doi.org/10.1080/10871209.2021.2018737>
- Sink, K., Holness, S., Harris, L., Majiedt, P., Atkinson, L., Robinson, T., Kirkman, S., Hutchings, L., Leslie, R., Lamberth, S., Kerwath, S., Heyden, V. d., Lombard, S., Attwood, A., Branch, C., Fairweather, G., Taljaard, T., Weerts, S., Cowley, S., ... Worlf, T. (2011). National biodiversity

- assessment: Technical report. Volume 4: Marine and Coastal Component. South African National Biodiversity Institute, Pretoria.
- Smith, V. I., & Font, X. (2014). Volunteer tourism, greenwashing and understanding responsible marketing using market signalling theory. *Journal of Sustainable Tourism*, 22(6), 942–963. <https://doi.org/10.1080/09669582.2013.871021>
- Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences*. Routledge.
- Strzelecka, M., Nisbett, G., & Woosnam, K. M. (2017). The hedonic nature of conservation volunteer travel. *Tourism Management*, 63, 417–425. <https://doi.org/10.1016/j.tourman.2017.06.022>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed). Allyn and Bacon.
- Vann-Sander, S., Clifton, J., & Harvey, E. (2016). Can citizen science work? Perceptions of the role and utility of citizen science in a marine policy and management context. *Marine Policy*, 72, 82–93. <https://doi.org/10.1016/j.marpol.2016.06.026>
- Van Tonder, S.M., Hoogendoorn, G. & Block, E. 2017. Conservation volunteer tourism in the hart-beespoort region, South Africa: An exploratory study. *African journal of hospitality, Tourism and Leisure*, 6(1):1–13.
- Volunteerworld.com. 2022. *Volunteerworld*. [Online]. Available at: <https://www.volunteerworld.com/en>. Date Accessed: 10 May 2022
- Wearing, S. (2001). *Volunteer tourism: Experience that make a difference*. Cabi Publications.
- Wearing, S., & McGehee, N. G. (2013). Volunteer tourism: A review. *Tourism Management*, 38, 120–130. <https://doi.org/10.1016/j.tourman.2013.03.002>
- Weaver, D. (2015). Volunteer tourism and beyond: Motivations and barriers to participation in protected area enhancement. *Journal of Sustainable Tourism*, 23(5), 683–705. <https://doi.org/10.1080/09669582.2014.992901>
- Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. (1977). Assessing reliability and stability in panel models. *Sociological Methodology*, 8, 84–136. <https://doi.org/10.2307/270754>
- Wisner, P. S., Stringfellow, A., Youngdahl, W. E., & Parker, L. (2005). The service volunteer – loyalty chain: An exploratory study of charitable not-for-profit service organizations. *Journal of Operations Management*, 23(2), 143–161. <https://doi.org/10.1016/j.jom.2004.07.003>
- Wood, P. (2010). *A conceptual exploration of marine research tourism in Australia: a study of the conceptual, supply, and demand nature of marine research tourism in Australia*. Doctoral dissertation, James Cook University, Australia.
- Wood, P., & Coghlan, A. (2008). The conceptual nature of marine research tourism and key stakeholder involvement in marine research tourism”. In *Cauthe conference - where the bloody hell are we? conference proceedings*.
- Wood, P., & Zeppel, H. (2008). The preferences of potential marine research tourists for different marine research tourism products in Australia”. In *The future success of tourism: new directions, challenges and opportunities*. ISTTE (international society of travel & tourism educators) conference.
- Wu, D. C., Fu, H., & Kang, M. (2017). Why volunteer teaching tourism? Empirical evidence from China. *Asia Pacific Journal of Tourism Research*, 23(2), 109–120.
- Zeppel, H., & Muloin, S. (2007). Marine wildlife tours: Benefits for participants. In J. Higham, & M. Lück (Eds.), *Marine wildlife and tourism management: Insights from the natural and social sciences* (pp. 19–48). CABI.
- Zeppel, H., & Muloin, S. (2013). Green messengers or nature’s spectacle understanding visitor experiences of wild cetacean tours. In J. Higham, L. Bejder, & R. Williams (Eds.), *Whale-watching: Sustainable tourism and ecological management* (pp. 110–127). Cambridge University Press.
- Zhang, H., Wu, Y., & Buhalis, D. (2018). A model of perceived image, memorable tourism experiences and revisit intention. *Journal of Destination Marketing & Management*, 8, 326–336. <https://doi.org/10.1016/j.jdmm.2017.06.004>

Annex 1. Questionnaire structure and literature sources.

Section A – Socio-demographic profile	Literature source
Gender	Garcia-Soto et al. (2017); Polus and Bidder (2016); Roques et al. (2018); Shum et al. (2021)
Age	
Origin	
Education	
Subject of study	
Occupation	
Profession	
Previous MVT experience	
Time involved in volunteering	
Trip duration	
Spending per day	
Section B – Motivations to participate in MVT	
<i>Based on scale of importance: 1 = not at all important, 2 = not important, 3 = neutral, 4 = important, and 5 = very important</i>	
I participated in MVT because:	
I want to contribute to marine conservation	Bradford and Israel (2004); Caissie and Halpenny (2003);
I want to contribute to animal protection and welfare	Campbell and Smith (2005); Carvache-Franco et al. (2019);
Marine conservation and marine issues are very close to my heart	Germann Molz (2017); Grimm and Needham (2012);
I want to feel part of a marine conservation community	Halpenny and Caissie (2003); Kitney et al. (2018); Lo and Lee (2011); Roques et al. (2018); Shum et al. (2021); Van Tonder et al. (2017)
I want to be a part of solving marine issues	
I want to contribute to the successful management of marine areas	
I want to give something back to the community and the environment	
I am compassionate towards marine animals in need	
It is an opportunity to learn about marine life	
It is an opportunity to explore career options	
It is an opportunity to interact with marine life	
It is an opportunity to meet and interact with marine scientists	
It provides me with an opportunity to gain important skills	
It is a good escape from my daily life	
It helps me to work through my personal problems	
It helps me feel less lonely	
It makes me feel important and useful	
Marine volunteering is a chance of a lifetime	
It is a fulfilling experience	
It makes the tourism experience more meaningful	
My family and friends partake in volunteering programmes	
It is part of my society's traditions and/or culture	
It is an opportunity to make new friends with similar interests	
It is fun	
I want to experience the local traditions and cultures	
I wanted to be somewhere new	
Section C – Expectations in MVT	
<i>Based on scale of importance: 1 = not at all important, 2 = not important, 3 = neutral, 4 = important, and 5 = very important</i>	
My expectations for participating in MVT included:	
Availability of sufficient equipment for research	Andereck et al. (2011); Coghlan (2007); Hammersley (2014);
Good coordinator's expertise	McDonald and Wilson (2013); Wood and Coghlan (2008)
Brand new knowledge about marine life and conservation	
Good quality training on different things	
A suggested packing list	
A detailed programme of the activities to be offered	
A list of do's and don'ts	
Materials related to marine life, conservation and management at the destination	
Group meetings/pre-trip briefings	
A list of pre-trip/post-trip add-on marine experiences	
Impressive natural beauty at the destination	

A clean environment
 Plenty of interactions with marine life
 Plenty of diving
 Good quality food
 Comfortable accommodation facilities

Section D – Satisfaction with MVT

Based on scale of satisfaction: 1 = totally dissatisfied, 2 = dissatisfied, 3 = neutral, 4 = satisfied, and 5 = totally satisfied

Indicate your level of satisfaction with the following aspects of your experience as a marine volunteer:

The people that I have met Andersen and Miller (2006); Barbieri et al. (2012); Ferreira et al. (2012); Han et al. (2019); Lee et al. (2014); Meng and Han (2018); Polus and Bidder (2016); Wood and Coghlan (2008); Wu et al. (2017)

The interactions I had with marine life

The marine species I had contact with

The accommodation

The food

The free time that I had available to explore

The location and the places I managed to see

The interactions I had with the local community

The education received on the different marine species

The information received on marine issues and conservation

The project's webpage/social media

The overall outreach of this volunteer project

The communication between staff and volunteers

The orientation received

The guidance by the coordinators

The technology available

The overall quality of the volunteer programme

The overall success of the project

The data collected by us, the volunteers

The training received

My job assignment and my performance

The recognition given to me by staff for the job that I have done

The organisation of the programme

The equipment and tools that were provided to me

The infrastructure of the volunteer programme

Section E – Perceived ethical conduct of the MVT organisation

Based on scale of agreement: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree

I feel that the programme/s I worked with acted according to ethical considerations with regards to:

Handling of marine life Benson and Henderson (2011); Gray and Campbell (2007); Fermani et al. (2020); Goodwin (2011); Ong et al. (2013); Moorhouse et al. (2017); Richards et al. (2015); Roques et al. (2018); Smith and Font (2014); Wearing (2001)

Treatment of staff

Treatment of volunteers

Personal conduct of staff and volunteers

Conservation of the environment

Community engagement

Pro-environmental practices

Compliance with local rules and regulations concerning the marine environment

Section F – Post-experience attitudes

Based on scale of agreement: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree

Based on my experience as a marine volunteer, I:

Feel that everybody should be educated on marine conservation Alexander (2012a,b); Andersen and Miller (2006); Barbieri et al. (2012); Broad and Jenkins (2009); Campbell and Smith (2005); Cárdenas and Lew (2016); Chua et al. (2021); Hindle et al. (2010); Johnson et al. (2014); Lew (2015); Lyons et al. (2012); McGehee (2012); McGehee and Santos (2005); Roques et al. (2018); Schänzel and McIntosh (2000); Strzelecka et al. (2017); Wearing and McGehee (2013); Weaver (2015); Wisner et al. (2005); Zeppel and Muloin (2007); Zhang et al. (2018)

Will educate my family and friends on marine issues and conservation

Will educate myself about marine issues and conservation so that I can better contribute to conservation

Will only engage in responsible tourism that benefits conservation

Will recycle in the future

Will reduce unnecessary waste

Am interested to learn more about conserving marine resources through daily acts

Will try to conserve the marine environment for future generations

Respect laws and regulations dealing with the protection
of marine and coastal environments
Will abide by laws and regulations which are intended for
environmental protection at home and at work
Feel that stricter policies should be implemented to
conserve the marine environment
Will sign petitions to protect and conserve marine life
Will become a member of an organisation that protects
marine life
Will participate in public relations campaigns to prevent
incompatible industries from damaging ecosystems
Will participate in environmental lobbying to conserve
the marine environment
Will participate in this volunteer programme again even if
the price increases
Will continue to participate in volunteer programmes that
deal with marine conservation
Will participate in any kind of volunteering in the future
Feel that I have obtained a general interest in science
Feel that volunteering is a powerful scientific tool
Feel that I will join other citizen science projects
Feel that I will pursue a career in science
Am interested in a career that focuses on marine
conservation and marine sciences
Will motivate others to invest in a career that focuses on
marine conservation and sciences
Will donate money to marine conservation organisations
Will pay to go to marine protected areas
Will pay to raise funds for marine conservation
Will pay to support non-governmental organisations
Will pay to assist organisations and governments
conserve natural resources
