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Understanding People Who Volunteer With Marine Turtles: Motives and Values for Engagement in Conservation

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Declaration of Interest Statement

None

Ethical Standards

The authors assert that all procedures contributing to this work were approved by the Human Research Ethics Committee at James Cook University, Australia (Ethics Approval Number: H7321), and comply with applicable ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Abstract

Volunteers play a key role in the conservation of many threatened species, yet volunteer motivations for participating in conservation and strategies used for attracting and retaining volunteers remain little studied. Iconic and charismatic megafauna species, such as marine turtles, attract the attention of conservation volunteers worldwide, making this species an ideal case study to explore volunteer motivations. We developed a novel values-based framework that examines the motivations and values of people volunteering with turtles in Queensland, Australia by harmonizing insights from Values Belief Norm (VBN) theory and intrinsic, instrumental, and relational values. We found that although motivations for these volunteers are multi-faceted, common factors underpinning volunteering decisions included values alignment with the organization, social influence, the ability to learn, and optimism. Awareness of these characteristics can assist organizations with designing more effective voluntary programs and further scholarly understanding of drivers of pro-environmental behaviors among a key group of environmental stakeholders.

Keywords: turtle conservation, volunteer, motives, values, Australia

Introduction

Marine turtles are key flagship species in conservation due to their charismatic megafauna persona (Frazier, 2005). As a result, marine turtle conservation is an international cause that has attracted enthusiasts and organizations worldwide to establish volunteer programs dedicated to sustaining turtle populations (Campbell, 2010). The establishment of these programs in countries with a significant distribution of important turtle nesting sites, such as Australia, provides an opportunity for volunteers to engage directly in turtle conservation through hands-on approaches (Gray & Campbell, 2007). Increased participation in turtle conservation programs over the last 30 years suggests that volunteering efforts are highly valued in helping to recover turtle populations (Mazaris et al., 2017; Senko et al., 2011; Whaling, 2017). In Australia, the establishment of volunteering programs has become a priority strategy for addressing environmental issues across the nation (Australian Government, 2011; Dovers, 2000).

Volunteering is critical to the success of marine turtle conservation because it: (a) provides potential income for volunteer organizations in the form of paid volunteering opportunities or membership fees, (b) can discourage illegal activities on nesting beaches due to the physical presence of volunteers, and (c) can deliver valuable contributions to research (Campbell & Smith, 2005). In an increasingly constrained funding environment, understanding the underlying motivations and values of volunteers can help program organizers design more attractive programs that meet the needs and interests of volunteers (Ryan et al., 2001).

Although volunteering with marine turtles comprises similar activities across programs, the decision to volunteer varies among individuals (Nassar-McMillan & Lambert, 2003; Penner, 2004). Research suggests that the intention to take action is framed on individuals' relationships to the environment (Etzion, 2007) because a connection to nature can satisfy a variety of human

needs such as a greater sense of appreciation, a means of relieving stress, a means of learning, or a connection to something beyond the individual (Guiney & Oberhauser, 2009; Wilson, 1984), among others. Moreover, participating in specific environmental projects fosters individual awareness, knowledge, and the ability to visibly see the restoration of an environment (Bramston et al., 2010). Participating in marine turtle conservation work, specifically, is a popular choice partly because it allows volunteers to interact directly with marine turtles (Campbell & Smith, 2006). This can engender personal connections to the species and encourage support for marine turtle conservation over the long term (Wilson & Tisdell, 2003).

Although recent research has focused on understanding aspects of volunteering among individuals who seek to combine both travel and their service under the form of what has been called ‘voluntourism’ (Abreu & Ferreira, 2021; Campbell & Smith, 2006; Ellis, 2003; Lyons & Wearing, 2008; Schneller & Coburn, 2018; Tukamushaba et al., 2017; Wearing, 2001), there has been comparatively little research combining quantitative and qualitative approaches to understand the underlying knowledge, motivations, and values of environmental volunteers more broadly, including those who regularly volunteer within their own communities. An improved understanding of the motivational links between the environmental program and volunteers may help to facilitate a strong sense of stewardship to successfully achieve conservation goals (Ryan et al., 2001).

Toward a Unified Framework for Understanding Volunteer Motivations

Research into volunteer motivations has developed incrementally over the last 30 years. An early framework by Clary et al. (1996) investigated volunteers’ motivations from a national survey targeting all individuals volunteering in various areas from health to youth development in the United States. Six key motivations were identified: (a) values (putting personal beliefs into

action), (b) understanding (developing and learning new skills), (c) career (opportunity for professional development), (d) social (working closely with those who share a similar outlook), (e) enhancement (building on personal goals), and (f) protective (to relieve guilt) (Clary et al., 1996). Ryan et al. (2001) subsequently identified five additional motivational factors in an environmental stewardship context, leading to a more expansive understanding of volunteer motivations. These factors were: (a) helping the environment (sense of doing something good for the environment), (b) learning (opportunity to gain more knowledge about the environment), (c) project organization (well-organized and established volunteer program), (d) social (opportunity to meet like-minded people), and (e) reflection (intrinsic, emotional benefits) (Ryan et al., 2001). Learning as a motivating factor is commonly emphasized in environmental stewardship studies (Borhan & Ismail, 2011; Bruyere & Rappe, 2007; Schroeder, 2000). For people who volunteer with marine turtles in particular, participants have the benefit of developing knowledge about turtle life-cycles and conservation concerns (Tisdell & Wilson, 2001).

Studies of environmental volunteerism have demonstrated the influence of personal values and norms on pro-environmental behavior (Casper et al., 2020), and also indicated that environmental concern and knowledge can positively influence pro-environmental behavior (Yadav & Pathak, 2016). Campbell and Smith (2006) identified eight categories of environmental and wildlife values expressed by volunteers working with a marine turtle conservation group in Costa Rica: (a) conservation (to protect turtles from further decline), (b) scientific (understanding the role of turtles in the environment), (c) aesthetic (the beauty of turtles), (d) humanistic (emotional connections to turtles fostered from past experience), (e) experiential (new interaction with turtles), (f) intrinsic (value in itself), (g) existence (a new experience), and (h) spiritual (a strong sense of stewardship to protect turtles). In their study,

multiple values were often expressed in combination, such as scientific and conservation values or experiential and aesthetic values (Campbell & Smith, 2006).

In this article, we integrated findings from Campbell and Smith (2006) with insights from two other frameworks that seek to develop an understanding of environmental values, social-psychological processes, and their relationship to action. First, the Values Belief Norm (VBN) theory focuses on the translation of personal values to pro-environmental behavior (Stern, 2000), with some values taking priority over others (Bouman et al., 2018). In this conceptualization, four values have been identified to influence pro-environmental behaviors: (a) biospheric (concern for the environment), (b) altruistic (concern for the wellbeing of others), (c) egoistic (concern for personal resources), and (d) hedonic (concern for ease and comfort) (Bouman et al., 2018).

Second, in framing our understanding of volunteer motivations, we also drew on recent developments in the understanding of relational values (Kai et al., 2016). This approach suggests that an individual's relationship with nature is multi-faceted and includes intrinsic, instrumental, and relational components. That is, values are based not only on the utility of the environment (instrumental values) or its intrinsic value (the inherent value of the environment independent of the benefits that flow to people), but also on "how [people] relate with nature and with others, including the actions and habits conducive to a good life, both meaningful and satisfying" (Kai et al., 2016, p. 1462). Applying the concept of relational values to marine turtle conservation can help deepen understanding of volunteer motivations given that interactions among individuals, nature (e.g., species), and other people act as a complementary linkage to considerations of intrinsic and instrumental values (Klain et al., 2017). Drawing on relational values recognizes that conservation is a collective process of shared experiences that facilitate good stewardship of

nature. Currently, identifying relational values for the environment on a species-level has received limited attention.

‘Pull’ versus ‘Push’ Motivations

Although it is well understood that individuals engage in conservation projects due to internal (i.e., push) motivations, there is less information available about the role of pull motivations, which include actions that conservation organizations can take to attract and retain volunteers (Grimm & Needham, 2012b). Understanding pull motivations, such as attractiveness of the project destination, project attributes, and organization traits, may help project managers design voluntary programs with higher recruitment and retention rates (Grimm & Needham, 2012b). For example, the organization’s use of promotional material, such as an aesthetically pleasing and informative website, was found to be a critical motivating factor in a volunteer’s selection criteria for engagement (Grimm & Needham, 2012a). Volunteer programs that were also highly organized and equipped with strong leaders and good communication saw less turnover intentions from volunteers (Ryan et al., 2001). In addition, organizations with a strong identity tend to have individuals who are more motivated to perform well due to a better work environment (Daan, 2000; Steers, 1977).

Study Purpose

In this article, we examined motivations of volunteers engaged in marine turtle conservation programs in Queensland, Australia, which is an important global site for marine turtle volunteering programs. Our purpose was to explore and leverage our understanding of the success of marine turtle conservation work by drawing together literature from environmental psychology and its relationship to social psychology and environmental management, including disparate conceptual frameworks associated with values and volunteer motivations. Although

several frameworks for understanding volunteer motivations exist, most of these were developed more than a decade ago. Our study used both qualitative and quantitative approaches to elucidate the motivations and values of people volunteering with marine turtles, and derive insights that can be generalized to other species that may be dependent on volunteers for their conservation.

Methods

Study Context

Our study was conducted in Queensland, Australia, which is a state with favorable conditions for turtle nesting. Six out of the seven species of marine turtles have been identified to breed and/or forage within this region (DES, 2016). The east coast of Queensland supports more than 200 marine turtle nesting sites (Garcon et al., 2010). The distribution of these nesting sites along this coast provides ample opportunities for marine turtle organizations to attract volunteers for conservation activities.

Study Design

Using online and paper questionnaires, we surveyed volunteers associated with four marine turtle conservation organizations located in Townsville and Cairns, which are on the northern coast of the Great Barrier Reef. These organizations were: (a) The Caraplace at James Cook University Turtle Health Research (Townsville), (b) Reef HQ (Townsville), (c) Sea Turtle Foundation (Cairns), and (d) Cairns Turtle Rehabilitation Centre (Cairns). Key representatives from these four organizations assisted with recruiting participants through their volunteer databases and social media networks. To reduce participant bias, leaders of the conservation groups were asked to use a variety of methods to distribute the questionnaire over a four-week period (social groups, mailing lists, and social media outputs) (Robins et al., 2010). The nature of this sampling approach allowed more organizations to participate in our study and targeted

participants who were currently volunteering at turtle conservation organizations in Queensland.

Unlike many conservation programs, the organizations that we surveyed do not require volunteers to pay to participate. However, some volunteers at the Cairns Turtle Rehabilitation Centre may have been sourced from the partnership with “Oceans 2 Earth Volunteers,” which is a service that organizes volunteering experiences for a price. We noted this distinction because individuals may have different volunteer intentions depending on their financial resources (Bussell & Forbes, 2002). Our study included volunteers who were participating at these marine turtle organizations at the time of our study (March 2018).

We used VBN theory to inform the design of statements within the questionnaire (Bramston et al., 2010; Campbell & Smith, 2006; Gurney et al., 2017). A total of 28 statements were included (Table 1) and these were structured into six domains that contained, but were not limited to, the four environmental values of the VBN theory: (a) demographic information about volunteers, (b) length of time they were involved in turtle conservation, (c) perceived attachment to the sea turtle organization, (d) social norm (i.e., perceived social pressure that influences the decision to perform or not perform the behavior) related to the value of marine turtle conservation, (e) experiences and challenges with volunteering, and (f) knowledge and concern of the species. These six domains drew on VBN theory and included items utilized from earlier studies of environmental stewardship that were intended to probe individuals to reflect on their experiences with marine turtle conservation beyond surface level motivations (Gurney et al., 2017; Ryan et al., 2001; Yadav & Pathak, 2016). All statements were measured on a 5-point scale (1 = *strongly agree* to 5 = *strongly disagree*). Demographic characteristics of the volunteers included age, gender, country of birth, education level, and employment status. Participants were also asked to answer the following open-ended question to provide any further insights on their

reasons for involvement in marine turtle conservation that were not already represented in the quantitative items: “In only a few lines, why did you get involved in sea turtle conservation?” Participants were also given the choice to add further open-ended comments regarding marine turtle conservation at the end of the questionnaire. All responses were anonymous.

Data Analysis

A principal components analysis (PCA) using direct oblimin (i.e., oblique) rotation was conducted to identify the underlying structure of the quantitative statements shown in Table 1 (Gosling & Williams, 2010). Due to the small sample size (discussed below), it was necessary to screen all individual Kaiser-Meyer-Olkin (KMO) values for each statement and run Barlett’s test for homogeneity of variances. Inflexions from the scree plot suggested retaining four or five dimensions. The analysis revealed four dimensions that best fit the data, which required removing six questionnaire items from further analysis. As suggested by Stevens (2002), factor loadings with an absolute value above .40 were retained. The reliability (i.e., internal consistency) of dimensions was tested using Cronbach’s alpha.

We also utilized a phenomenological approach to identify themes within the experiences of volunteers reported qualitatively and as described in their own words (Creswell & Poth, 2016). Following the methodology of Bruyere and Rappe (2007), the open-ended responses were initially coded inductively to investigate whether any arising themes reflected the dimensions identified from the quantitative analysis. Taking this into consideration, a second stage of coding was then performed by a deductive approach within Microsoft Excel. This helped to provide further insight into the dimensions revealed by our quantitative analysis. Subjectivity was reduced by having more than one researcher review the analysis. Direct quotes from open-ended responses remained anonymous by using pseudonyms (P = Participant).

Results

Respondent Demographics

A total of 107 individuals participated in our study. However, after removing incomplete responses and outliers, which included organizations from outside Australia, responses from 80 volunteers were retained for these analyses. The respondent group comprised of 69 females (86%) and 11 males (14%; Figure 1). The largest proportions of participants were in the age groups of 18-24 (36%) and 25-34 (39%). Most participants were tertiary educated, with 39% having earned a bachelor's degree, followed by a postgraduate qualification (28%), high school certificate (24%), and Technical and Further Education (TAFE) certification (10%). Although the majority of the sample included young adults, the employment status was 69% employed (including casual/freelance/self-employed) and 31% unemployed (student, retired, looking for work), with 14% of participants who were classified as employed and also identified as students.

[Insert Figure 1]

Motivations and Values

Our analysis of the quantitative data revealed four dimensions that characterized the motivations and values of these people who volunteer with marine turtles (Table 1, Figure 2); these dimensions were labeled: *values alignment*, *social norms*, *knowledge and kinship*, and *optimism*, and these attained Cronbach alpha values of .75, .85, .74, and .67, respectively. These values suggest adequate reliability (Vaske, 2019).

[Insert Table 1 and Figure 2]

Values Alignment

The first dimension reflected the extent that these volunteers felt they can personally make a difference to marine turtle conservation, thereby sharing common values with the

mission of their volunteering organization. The strongest factor loading in this component was for the statement, “[The organization I volunteer with] shares the same concern I have for marine turtles.” We characterized this dimension as *values alignment* (shared values between an individual and the organization to achieve positive outcomes for marine turtles).

Social Norms

The second dimension highlighted common social norms, with the strongest factor loading for the statement, “Most people who are important to me would agree that marine turtles are endangered.” All items within this dimension explained how a volunteer’s strong environmental values toward marine turtles were reflected among their social groups, and was labeled *social norms* (the communal value to protect turtles).

Knowledge and Kinship

Items from the third dimension reflected an individual’s knowledge about and prior experience with marine turtles. The strongest factor loading was for the statement, “I have a lot of experience handling marine turtles.” We expressed this dimension as *knowledge and kinship* (an understanding about marine turtles acquired by past involvement or experience, which was also associated with feeling an affinity with marine turtles).

Optimism

Items retained in the fourth dimension expressed *optimism* or belief in society’s ability to protect marine turtles. The strongest factor loading was for the statement, “There are effective conservation strategies to support the recovery of marine turtles.”

Personal Narratives about Volunteering With Turtles

Participants also provided narrative (qualitative) responses to two open-ended questions, and these responses provided further insight into the motivations of these volunteers.

Access to Opportunities

Some of these volunteers (23%) described initially becoming involved in turtle conservation through living in the area (e.g., living near the beach, proximity to the organization) or by universities offering internships or work placement. In total, 52 of the 77 volunteers (68%) who answered the open-ended questions also expressed more than one construct within the same passage. For instance, volunteers who expressed *access to opportunities* often expressed *organizational values* as well. For example, P5 stated, “Initially, I got involved as part of a required university work placement. Then, I returned at a later date as I enjoyed it so much.”

Organizational Values

Some of these volunteers (19%) also strongly expressed specific attributes related to the organization. For example, P53 stated that:

“My season at [organization] has changed and influenced my view on a future career in marine science. I will endeavor to return to Australia or build a future career worldwide attempting to continue in the field of marine conservation. This is in no small part due to the enthusiasm and tenacity shown by [leader] and the team at [organization].”

Kinship and Responsibility

Several of these volunteers (35%) described how their involvement was linked to a sense of responsibility to make a difference, as P47 stated, “I work in tourism and first started as a way to learn more about the tours held at [organization]. I immediately fell in love with turtles and felt a real connection and a duty to educate people on the importance of helping to protect this amazing marine animal.”

A small proportion of volunteers (17%) also explicitly described their involvement

stemming from their affinity and attachment with turtles, expressing statements such as “love for turtles” or “fascination with marine turtles,” and “I have a passion for protecting a vulnerable and historic animal.” Only a few volunteers (9%), however, described their kinship for turtles as linked to broader conservation ideals, suggesting that it is the turtle species themselves that hold a key attraction for these volunteers.

Participants who linked their involvement with conservation (31%) stated that their involvement was more from a general interest in protecting all marine life, meeting like-minded people, and contributing back to the environment as a family, such as P76:

“I love the ocean, always have, and I love every marine animal. Turtles are one of my favorites because they have been on this Earth for so long and I want them to stay here for much longer. Everyone should do as much as he/she can, even if it's not a lot, everything helps.”

Some other volunteers (6%) also solely expressed their personal desire (i.e., responsibility) to ensure that turtles will “be around for future generations to appreciate” (P37). One volunteer (P75), for example, elaborated on their reason for involvement by stating:

“For turtle conservation, I think everyone volunteers for different reasons, but at the same time we're all similar in our goal. I think that knowing the impact that humans and human activity have on sea turtles, you have this sense of responsibility to look after them and maintain the way the ecosystem works.”

Knowledge and Experience

Approximately one-third of these volunteers (34%) described *direct* experiences with turtles, such as involvement through university requirements, work experience, or previous interactions to be their reason for involvement. For example, P1 stated:

“I wanted to gain hands on experience in marine science. I lived on the beach and was always fascinated with sea turtles and all the struggles they face, and yet they're such a long lived species. After seeing my first nest of leatherback hatchlings, I was hooked for life!”

For some others (27%), *indirect* experiences, such as a general interest in the environment, understanding of the role of marine turtles for the environment, or even the aesthetic attraction of working with turtles, motivated their involvement. For example, P63 described, “Their charismatic features, [my] love for nature and ocean, [my] love for virology!”

Only a few respondents (5%) expressed both *direct* and *indirect* experiences as their reason for involvement. For example, P74 stated, “Always loved turtles, volunteered before at an animal rehab in South Africa, so wanted to do more with different animals. Also, [I am] qualified in animal care, so wanted more experience.”

Efficacy

A few of these volunteers (9%) described how involvement with turtle conservation work must be approached collectively such that the perception of volunteering becomes a means to help conserve the future of marine turtles (i.e., *efficacy*). For example, when it comes to making a difference in conservation outcomes, P13 stated, “climate change must be addressed globally or else eggs will be gender skewed or just cooked. Climate change is the biggest challenge, but that shouldn't stop volunteers counting nests, responding to strandings, doing beach cleanups, and running rehab centers. Every bit counts.” A few of the volunteers elaborated on this point by mentioning the need for larger stakeholders to be involved. P35 highlighted this by stating, “I feel like the little things we do can improve the lives of single turtles. But, bigger corporations and entire countries need to work together if we want to save these entire species.”

Discussion

Demographics

Consistent with demographic trends found in environmental volunteering more broadly (Bradford, 2003; Campbell & Smith, 2005; Measham & Barnett, 2008; Rinkus et al., 2017), our results described these people who are volunteering with marine turtle as young adults (18-34 years) who are typically female and of higher socio-economic status with many educated beyond high school and now employed to some degree. This reflects broader research indicating that young people may be more concerned about the environment and show greater concern for and affinity with animals compared to older generations (Campbell & Smith, 2006; Kellert, 1993; Stolle et al., 2008; Su & Martens, 2017; Xiao et al., 2019). Although nesting marine turtles are one of the only large endangered taxa that allow for safe approachable encounters (Campbell & Smith, 2006), working with marine turtles can involve physically demanding tasks, thereby possibility limiting the ability of older people to volunteer. Nonetheless, these traits punctuate the attraction of volunteering to students due to their time flexibility and to individuals with the financial resources to comfortably invest in a volunteering organization.

The large proportion of female volunteers participating in our study reflects an identified difference between the motivations of men and women in voluntary organizations (Norris & Inglehart, 2013) where women appear more likely to emphasize the desire to give back to a meaningful cause (Campbell & Smith, 2005). The gender composition of cohorts who volunteer with marine turtles may reveal gendered patterns within environmental stewardship behaviors. For instance, recruitment for volunteers at The Caraplace at James Cook University is not advertised broadly and targets volunteers from within the university where a higher percentage of women are enrolled compared to men (females = 61%, males = 39%; JCU, 2017). This

reflects broader research on environmental stewardship where there are varying circumstances to consider beyond intrinsic and extrinsic motivations, and the capacity to act (Bennett et al., 2018).

Motivations and Values

Our results highlighted several motivations and values among these people who volunteer with marine turtles, and these motivations and values are comparable to past research (Campbell & Smith, 2005; Campbell & Smith, 2006; Clary et al., 1996; Ryan et al., 2001). Specifically, our quantitative results reflected strong aspects of ‘turtle-specific’ and ‘experience-specific’ motivations, as described by Campbell and Smith (2005), in which many participants expressed their desire to contribute, gain more experience, and acquire more knowledge about turtles. The motive to learn is likely heightened from the charismatic nature of turtles in attracting volunteers to participate as reflected in the *knowledge and kinship* dimension with items such as “marine turtles are more charismatic than any other species I have worked with.” Given that learning has the capability of satisfying multiple internal (i.e., push) motivations for different individuals, which is a defining point of the functional approach to volunteering (Bruyere & Rappe, 2007), this extends our understanding of the *knowledge and kinship* dimension by drawing significance to how a deeper understanding about marine turtles through experiences can contribute to building capacity for conservation. In our study, the qualitative results reinforce how direct and indirect knowledge in the lens of experience appear to be complementary in building capacity. This finding aligns with studies that have shown levels of experience and knowledge to encourage pro-environmental behavior where knowledge correlates to interest and is reinforced by experience (Turpie, 2003; Vicente-Molina et al., 2013). In other words, direct or indirect experiences with nature enhances knowledge and concern for the environment (Guiney & Oberhauser, 2009; Rosa & Collado, 2019). In doing so, individuals have the capacity to

strengthen their connection with nature, thereby driving environmentally protective behaviors such as conservation volunteering (Soga et al., 2016; Whitburn et al., 2020).

Encouraging engagement in conservation also requires that volunteers gain a sense of optimism (McAfee et al., 2019), which was one of the four dimensions revealed by our PCA. This requires more than just feelings of positivity and hope, but rather a sense and ability of achieving the desired positive outcome (Karademas, 2006). Here, the volunteers elaborated on the need to find ways to engage in working with local assets or the broader governance. The participant who specified the “little things” (P35) is of particular interest to discuss. The focus on little things is important because optimism can be categorized by ‘*little optimism*’ or ‘*bigger optimism*’ where the former refers to more “specific expectations about positive outcomes” (Peterson, 2000). The questions identified within the *optimism* dimension focused more on the wider expectations (i.e., big optimism). Given that the determinants between little or big optimism operate on distinct mechanisms, different strategies may be required to evoke the desirable outcomes (Peterson, 2000). In this case, volunteers who are aware of the gaps in turtle conservation may struggle to be optimistic toward current efforts. However, if turtle conservation programs are able to focus on and be more transparent about the specific issues hindering conservation, volunteers may respond more positively toward *little optimism*. For instance, whether volunteers feel more optimistic about the movement in reducing single-use plastic rather than the broad phrasing of “current efforts” may reveal the information needed to empower individuals to believe they are making a difference by inspiring small changes in their behavior. This highlights the value of effectively communicating the balance between optimism and realism to motivate individuals to engage in conservation. Although this can be driven by involvement of multiple sectors, our qualitative findings also advocated the strength in fostering

a greater sense of responsibility (as P75 described) as revealed by Klain et al. (2017), and uplifting personal efficacy (i.e., the ability to make a difference) in achieving positive outcomes.

The *values alignment* dimension that emerged from our data offers a new perspective to consider in a context specific to turtles. Items such as “[The organization I volunteer with] shares the same concern I have for marine turtles” and “I feel a sense of belonging to [the organization I volunteer with]” appear to demonstrate aspects of community and identity. Analogous to the relational values observed by Klain et al. (2017), our findings suggested that if shared values between the organization (community) and the volunteer (identity) exist, then organizations have the capacity to empower individuals to support environmental stewardship on a local scale (i.e., responsibility) (Bennett et al., 2018).

Local environmental stewardship draws on the actions and desire to responsibly protect and care for the environment (Bennett et al., 2018), and may be more favorable to volunteers with easier access to these opportunities to facilitate a shared sense of pride within the community (Fisher et al., 2015). As described by most of the volunteers in our study, opportunities for involvement were not limited due to their relevance in the area. The concept of place attachment explains how places reflect more than just a physical entity and rest on symbolic meanings of both emotional and functional components (Stedman, 2002). For instance, the Great Barrier Reef has been described as part of Australian society, where many described this reef as part of their identity and responsibility to protect from imposing threats (Goldberg et al., 2016). In the case of marine turtles, they are known to hold strong cultural, traditional, and economic values (Campbell & Smith, 2006; Frazier, 2003; Kowarsky, 1995). Although the role of place is beyond the scope of this article, our findings suggested that developing attachment may also extend to species of concern such as marine turtles, as well as to specific bio-socio-

cultural settings. In other words, the relation of a place to individuals is not limited to the physical and social (people) environment, but also to the wildlife.

Social norms were most strongly represented as one of the four dimensions in our quantitative results (PCA). Given that turtles are not only a popular choice as a subject for volunteering, but also symbolized in many social contexts, it is not surprising to find that volunteers are likely to also have friends and family who share the same concerns (Fisher & Ackerman, 1998; Frazier, 2005). Although this is common knowledge in the literature, our results extended our understanding of social influence by demonstrating the value in actively influencing others. This form of modelling is a type of social influence approach where an individual is motivated to engage in a behavior through social learning (Abrahamse & Steg, 2013). In this case, we suggest the act of social learning to take shape in the form of environmental passion where it fuels the experience of positive emotions that encourages others to participate in pro-environmental behavior (Afsar et al., 2016). Being able to express passion for the conservation of turtles effectively sets a seed to sprout for others to share the same interest (Sullivan & Syvertsen, 2019). Here, passion appears to also foster a strong familial connection to marine turtles (i.e., kinship; Klain et al., 2017) where individuals expressed a love and connection to turtles. From this, it is evident that turtles are indeed seen as a flagship species in conservation and should be leveraged to help share future conservation efforts for turtles and other threatened marine species.

Limitations

The generalizability of our findings presented here is limited by the small sample size and our convenience sampling of participating organizations. Our dataset thus limits the conclusions drawn on a larger scale. Furthermore, participation in our study does not necessarily equate to

representation. For example, the high representation of females may have been due to females having more of an opportunity to fill out the questionnaire than men. In addition, the qualitative analyses were based on open-ended responses that prevented any follow-up and are prone to subjectivity. To strengthen the results of our study, a follow-up through interviews or focus group discussions would help to further validate the motivations and values identified.

Due to the small sample size, our study also does not take into consideration the different motivations and values that may exist among different user groups. For instance, volunteers from different nationalities may be more motivated to be involved in conservation initiatives that reflects their skillsets and values in contribution rather than individuals who were always associated within the community. Addressing whether familiarity in volunteer roles among different user groups requires further research.

The motivations and values revealed in our study were also drawn from individuals in various organizations with different recruitment strategies and conservation aims. Given that the volunteers were pooled into one sample for analyses, our conclusions may not be applicable for each individual organization. Further research would ideally address this by obtaining larger sample sizes from each participating organization to allow for a comparative analysis of the dimensions and constructs identified.

Implications of This Work

Although we are unable to generalize the results of our study to all volunteers in the region, the following implications are proposed. First, we augmented the current understanding of people who volunteer in turtle conservation by introducing *values alignment, knowledge and kinship*, and *optimism* as important dimensions of volunteering. By highlighting how access to opportunities, organizational values, kinship and responsibility, knowledge and experience, and

efficacy encourage volunteers to be involved in marine turtle conservation, our research expands the work on understanding the social-psychological processes of environmental stewardship. If organizations prioritize making their goals clear, then individuals who share the same values are more likely to continue contributing and actively influencing others to participate because alignment and social influence empowers collective action within the community. Similarly, organizations that take the time to target specific conservation efforts and allow individuals to grow within the organization will help volunteers build a greater sense of responsibility and efficacy for continued engagement. Second, our results extend existing values frameworks applied to conservation volunteers. Specifically, our results highlight the need to further understanding about how people relate to the environment in a relational manner, as well as through instrumental or intrinsic values. Environmental values are expressed deeply and consistently through all aspects of this research – in the alignment of values between volunteers and organizations and in the connections that volunteers express with turtles and the broader marine environment. Third, this work highlights the role of place as a potentially important concept to help encourage local environmental stewardship and the potential role that species can play as ‘placemakers.’

Conclusion

Recognizing marine turtles as an endangered flagship species in conservation has led to a plethora of conservation organizations dedicated to protecting marine turtles with the support of volunteers. We used both qualitative and quantitative approaches to examine the motivations and values of people who volunteer with marine turtles. Given that many turtle nesting sites are located in Queensland, Australia, and thus are critical to sustaining populations, it is important to extend current knowledge in the literature to maximize conservation efforts. We introduced a

new narrative to understand these volunteers by asking how involvement with marine turtles reflects elements of *values alignment, social norms, knowledge and kinship, and optimism*. Although exploratory, this study provides a foundation for further work to enhance volunteer-based wildlife conservation.

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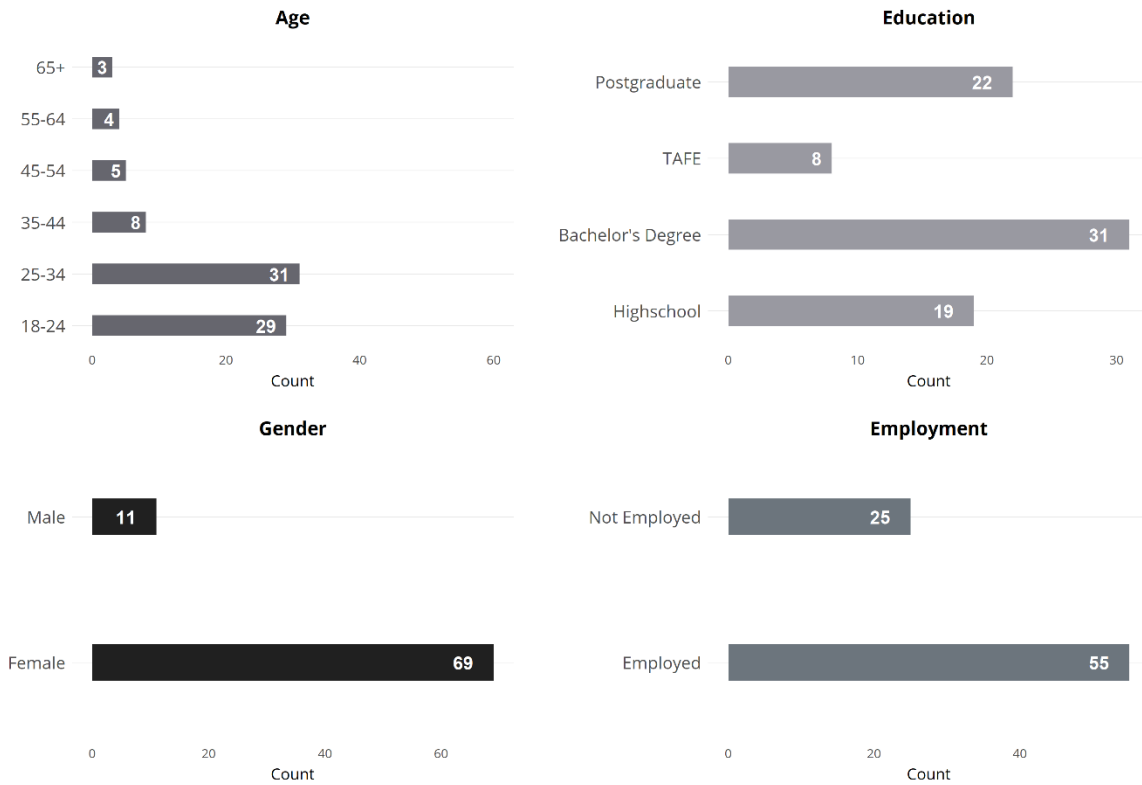


Figure 1. Summary of respondent demographic characteristics ($n = 80$) (TAFE= Technical and Further Education).

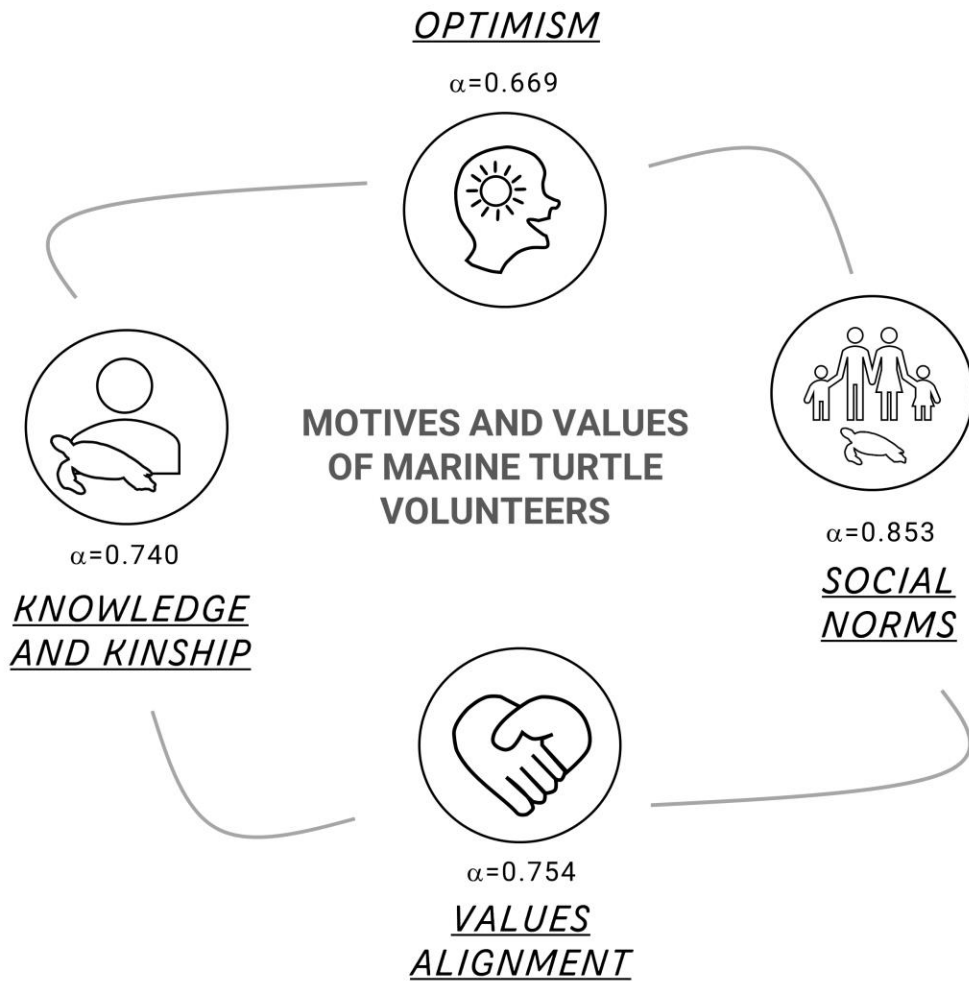


Figure 2. Motivations and values of people who volunteer with marine turtles grouped into four main dimensions: (a) values alignment, (b) social norms, (c) knowledge and kinship, and (d) optimism. (α = Cronbach's alpha measuring reliability)

Table 1. Summary of the principle components analysis results for the questionnaire ($n = 80$). Four dimensions were extracted: *values alignment*, *social norms*, *knowledge and kinship*, and *optimism*. Factor loadings $> .40$ that belong to each dimension are in bold. *

Item	Rotated Factor Loadings			
	Values Alignment	Social Norms	Knowledge and kinship	Optimism
1 [The organization I volunteer with] shares the same concern I have for marine turtles	0.772	-0.093	0.131	0.128
2 I feel a sense of belonging to [the organization I volunteer with]	0.727	0.089	-0.146	0.073
3 The people I work with support my opinion on conservation strategies for marine turtles	0.695	-0.094	-0.118	0.162
4 Participating in sea turtle work is rewarding	0.566	-0.006	-0.268	0.033
5 Marine turtles have important cultural values to people	0.547	0.042	0.078	-0.035
6 My effort toward sea turtle conservation makes a huge impact	0.502	-0.131	0.000	0.134
7 If sea turtles were to go extinct, there will be a major impact on ecological systems	0.433	-0.119	0.196	-0.120
8 Opportunities for involvement are not limited	0.425	0.127	-0.273	-0.288
9 The success in conserving marine turtles is evident with [the organization I volunteer with]	0.421	-0.345	0.084	0.151
10 Most people who are important to me would agree that marine turtles are endangered	-0.043	-0.875	0.066	-0.025
11 Those who are important to me encourage participation of conservation efforts toward marine turtles	0.016	-0.848	-0.110	-0.002
12 Most people who are important to me support the conservation of marine turtles	-0.053	-0.847	-0.115	-0.010
13 My family and friends hold strong environmental values	0.108	-0.704	0.004	-0.168
14 I have a lot of experience handling marine turtles	0.137	0.063	-0.816	-0.028
15 I have seen marine turtles numerous times in the wild	-0.067	-0.037	-0.803	-0.039
16 I have been involved with sea turtle conservation work before my time with [the organization I volunteer with]	-0.259	-0.090	-0.692	0.121
17 I am well informed about the advances in the conservation of marine turtles.	0.246	-0.173	-0.516	0.164
18 Marine turtles are more charismatic than any other species I have worked with	0.399	0.003	-0.441	-0.206
19 There are effective conservation strategies to support the recovery of marine turtles	0.077	0.263	0.033	0.756
20 I'm optimistic about the current efforts to conserve marine turtles	0.346	-0.072	0.011	0.730
21 I trust that humans will prevent sea turtles from going extinct	0.094	0.026	-0.050	0.667
22 Ecological systems can adapt to the effects of sea turtle extinction	-0.144	-0.023	-0.058	0.590
Eigenvalues	4.943	2.572	2.254	1.781
% of variance	22.468	11.691	10.246	8.095
Cronbach's alpha	0.754	0.853	0.740	0.669

* Six questions were removed from the analysis to best fit the data: (a) The economic value of marine turtles is important, (b) There is sufficient research to prevent the decline of marine turtles, (c) It is too expensive for me to participate, (d) Other organizations are better at managing conservation strategies for marine turtles than [the organization I volunteer with], (e) My efforts toward sea turtle conservation are seldom noticed, and (f) I like to voice my concern about marine turtles to others.