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Understanding tourist willingness to donate using the Protection Motivation Theory

Introduction

Coral ecosystems are complex and diverse, over the years they have endured human-induced threats and natural threats (Cesar, 2000). Although the twentieth century's pro-active regulations and control of fishing and pollution offer some level of protection to the reef system, threats brought by climate change, beach renewal, water pollution, chemical pollution among others have significantly reduced the effectiveness of the reef system. (Smith et al., 2013; Abelson, 2006). Consequently, a significant loss of the world's reefs estimated by 27% was caused by further destruction an expected 60% of global coral reefs will be ruined over the next 30 years (Cesar et al., 2004). Considering the vital role that the reef system plays in the world'; provides hundreds of millions of people with food security, pharmaceuticals, economic opportunity, tourism, and storm protection, robust conservation efforts must be at the center of restoring the world's reef system (Klein et al., 2010).

The future of coral reefs depends on the success of large-scale conservation initiatives (Hoegh-Guldberg, et al., 2018). Often large-scale efforts are difficult to implement because of the extensive economic considerations and financing required. Presently, there are several unfunded plans for coral nurseries, the most salient of which include transplantation efforts that restore extensive reef degradation anywhere from tens of square meters to several kilometers (Rinkevich, 2008). Extensive research has focused on willingness to pay for conservation efforts through user fees, taxes, premium payments from certain user groups such as scuba divers, anglers, and travelers. (Peter and Hawkins ,2009;Togridou et al.,2006;Mathieu et.al.2003). As such a large group of tourists who are not user-specific but frequent coastal travel destinations are not captured in donation behavior research. There is minimal research on conservation donation behavior and

voluntary contributions for environmental causes. Therefore, this study will build on providing empirical evidence utilizing Protection Motivation Theory (PMT) four factors (Rogers, 1983): severity, vulnerability, response efficacy, and self-efficacy to assess tourists' willingness to donate for respective coral reef conservation efforts.

Literature Review

The sustainability of coastal ecosystems requires careful planning and management, which is often limited due to inadequate financing. Specifically, funds for large-scale coral reef conservation efforts are scarce relative to what is needed to mitigate the ongoing biodiversity crisis (White, Bennett & Hayes, 2001; Waldron et al., 2013). A lot of research has focused on contingent valuation and the willingness to pay for Park and marine protected areas. This research has found that tourists can contribute directly to the coastal conservation efforts through entry or exit fees, user fees, voluntary contributions, taxes, and licensing fees. (Thur, 2010, Spergel and Moye 2004; Champ and Bishop, 2001; Depondt and Green, 2006). Coastal tourism can provide opportunities for financing conservation, little research has focused on how these funds can be collected without government regulation. This funding can come from voluntary donations for the use of protected areas (Alpizar et al., 2008). Nelson et al., (2019) in their study of nudging tourists to donate for conservation in Indonesia found that appropriately executed voluntary tourist eco-fee could bring significant financial benefits. Further indicated that if tourists going to an Island in Indonesia perceived it to be environmentally unsustainable they were willing to donate an eco-fee for various conservation issues. Other researchers have found that people with perceptions of danger from environmental threats exhibit higher inclinations to perform mitigating behaviors (Fisher et al. 1991; Abdalla et al. 1992; O'Connor et al. 1999), and more importantly, links have also been found between perceived vulnerability, and willingness to address climate change risks (O'Connor et al.

1999). Using these previous studies, we believe that the Protection Motivation Theory will be most useful in this study due to the constructs of threat and coping appraisal.

(PMT) has been used to explain risk-reduction behaviors or intentions to perform protective behaviors (Rogers, 1975; Fry & Prentice-Dunn, 2006; Roger & Prentice-Dunn, 1997; Prentice-Dunn, McMath, & Cramer 2009). Threat appraisal and a coping appraisal are considered when a person is deciding to engage in protective behaviors. Threat appraisals include two constructs Perceived severity the belief that the proposed threat is significant and potentially harmful and Perceived vulnerability the belief that the proposed threat can have a personal and direct impact on either individual or society. These two constructs are conceptualized by the levels of threat presented from various factors including dredging, bleaching as a result of rising temperatures, and unsustainable tourism activities. The fear-arousal process is thought to enhance protection motivations by heightening perceptions of severity and vulnerability. Coping appraisal constructs are response efficacy the individual's confidence in the effects of a certain action and self-efficacy an individual's confidence in one's ability to carry out that action. Efficacy is conceptualized by hopeful situations through mitigation strategies such as transplanting coral reefs in warmer areas of the globe, genetic modification of coral to be more heat-resistant, fragmentation, coral nurseries, and man-made underwater reef structures will nudge tourists towards action.

This present study uses PMT in a framework to assess tourists' willingness to donate toward coral reef conservation. It is anticipated that threats such as dredging and beach renewal projects, global climate change, unsustainable fishing methods will be appraised by tourists and affect their motivations to protect the coral reefs. Stronger protection motivations are thought to drive willingness to donate to conservation efforts. When a threat is perceived in conjunction with a level of hope associated with various mitigation strategies such as coral transplanting from reefs

in warmer areas of the globe, genetic modification of coral to be more heat-resistant, fragmentation, coral nurseries, and man-made underwater reef structures. As such, the present study research addresses the following questions:

R1: How do tourists appraise threat factors and mitigation attempts related to coral reefs

R2: Do tourists' threat and mitigation appraisals, in turn, affect motivations to protect coral reefs

R3: Are tourists' protection motivations associated with their willingness to donate for coral reef conservation efforts.

Scenarios where hope in form of restorative efforts such as coral transplanting from reefs in warmer areas of the globe, genetic modification of coral to be more heat-resistant, fragmentation, coral nurseries, and man-made underwater reef structures will nudge tourist towards action

Methodology

A survey will be developed and distributed online through Qualtrics. The survey will screen for tourists who have visited coastal destinations in the last 3 years. Appraisals of threat factors, mitigation factors, emotions, and willingness to donate based on the scenario will be included in the survey. Also, previous experience as a tourist to coral reef destinations and attitudes about the environment will be asked, which may moderate relationships among variables included in the study. Ecological attitudes will be measured using the New Ecological Paradigm Scale (Dunlap, 2008). Pro-social behavior will be measured using the philanthropy scale (Schuyt. et al 2010). Each responded will view one of six videos produced with embedded variables as part of a 2 x 3 experimental design. The variables include 'threat' (high threat; medium threat; low threat) as represented by future damage scenarios to coral reefs from pervasive threats (i.e. climate change, pollution, fishing, etc.); and 'hope' for coral reef restoration (high, low) represented by either the

potential success or limited potential of various conservation efforts. The manipulation of threat and hope levels produces six scenarios. Each participant will be randomly assigned to one scenario:

- A scenario with a high threat (e.g. natural disasters, global warming and other factors demonstrating maximum destruction of reefs and potential for the mass extinction of coral and marine life) with hope (e.g. high potential success of various restoration efforts and promising results from genetic coral engineering and coral fragment transplantation)
- A scenario with a medium threat (e.g. natural disasters, global warming and other factors demonstrating extensive ongoing destruction of reefs) with hope (e.g. high potential success of various restoration efforts and promising results from genetic coral engineering and coral fragment transplantation)
- A scenario with a low threat (e.g. limited focus on natural disasters, global warming, pollution, and other factors contributing to coral reef decline) with hope (e.g. high potential success of various restoration efforts and promising results from genetic coral engineering and coral fragment transplantation)
- A scenario with a high threat (e.g. natural disasters, global warming, pollution, and other factors demonstrating maximum destruction of reefs and potential for the mass extinction of coral and marine life) with less hope (e.g. limited potential success of restoration efforts and uncertainty around genetic coral engineering and coral fragment transplantation)
- A scenario with a medium threat (e.g. natural disasters, global warming, pollution, and other factors demonstrating extensive ongoing destruction of reefs) with less hope (e.g. limited potential success of restoration efforts and uncertainty around genetic coral engineering and coral fragment transplantation)

- A scenario with a low threat (e.g. limited focus on natural disasters, global warming, pollution, and other factors contributing to coral reef decline) with less hope (e.g. limited potential success of restoration efforts and uncertainty around genetic coral engineering and coral fragment transplantation)

Analysis

The hypotheses will be tested using ANOVA since there is one dependent variable willingness to donate. Overall testing the impact of manipulated variables threat level and hope will lead to a willingness to donate. This is a work-in-progress study. The findings will be included after the data collection and analysis.

Conclusion and Discussion

It is anticipated that results will help relevant stakeholders understand the strength of variable interactions on protection motivation and tourist behavior associated with donations. This research will build on a theoretical framework to advance theories on donation behavior for conservation.

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