

# Attitudes towards utilizing the oceans in contemporary Chinese society

Citation for published version (APA):

Chen, M. (2023). *Attitudes towards utilizing the oceans in contemporary Chinese society: gaining insights for sustainable human use of the oceans*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20230321mc>

## Document status and date:

Published: 01/01/2023

## DOI:

[10.26481/dis.20230321mc](https://doi.org/10.26481/dis.20230321mc)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

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## Summary

The oceans support the life of all the living creatures on land and the healthy functioning of the earth ecosystem. Nevertheless, current human use of the oceans is unsustainable globally. Not only human exploitation and utilization of marine resources stay at an unprecedented rate and in an irreversible way, but also human pollution and damage to the marine environment have reached a dangerous level and caused disastrous outcomes. Knowledge of human attitudes towards human use of the oceans is key to understanding unsustainable ocean use and achieving sustainable ocean use. Nevertheless, scarce information or knowledge, particularly regarding citizens from the Global South countries, is available in the scientific community. This research project was initiated under the background of global ocean sustainability challenges as well as the limited knowledge regarding the Global South in academia. In this research, we aim to explore how people understand the utilization of marine resources in contemporary Chinese society. In particular, this dissertation aims to gain insights into achieving sustainable human use of the oceans through investigating human attitudes towards utilizing marine resources in coastal Chinese society. By examining public attitudes towards marine life, offshore oil and gas drilling, and analyzing the origins of these public attitudes under the cultural and historical contexts in Chinese society, this dissertation engages in the debate of how sustainable ocean use can be achieved in coastal Chinese society. There are three questions are central to this dissertation:

- i. How do people in coastal Chinese society understand marine life and marine life protection? And what are the influential factors that shaped such public attitudes?
- ii. How do people in coastal Chinese society understand offshore oil and gas drilling? Especially, how much support do people show to offshore drilling? How much threats people perceive associated with offshore drilling? How much trust do people have in offshore drilling?
- iii. What are the cultural and historical origins of Chinese attitudes towards marine life and offshore oil and gas drilling in coastal Chinese society?

In order to answer our research questions, an integrated assessment method was employed in this research. An online survey and a grounded-theory approach were utilized to collect data and ensure our analysis was conducted from multifaceted (social, cultural, historical, etc.) perspectives. The online survey was carried out between late September and the beginning of October 2018 in 22 mainland coastal cities in China: Dalian, Yingkou, Qinhuangdao, Tianjin, Yantai, Weihai, Qingdao, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Xiamen, Shantou, Guangzhou, Shenzhen, Zhuhai, Zhanjiang, Beihai, Haikou, and Sanya. The questionnaire includes demographic questions, the Ethical Position Questionnaire (EPQ), the New Ecological Paradigm (NEP), a revised version of the Animal Attitude Scale (AAS), and a set of offshore drilling attitudes questions. Data analysis was performed with the help of SPSS

software program. The grounded-theory approach was based on results from our questionnaire and existing literature regarding the human-animal relationship in China.

This dissertation is composed of six chapters in total. Chapter 1 is the introductory section which draws the attention to our research topic, sustainable human use of the oceans. Starting from presenting the current unsustainable human use of the oceans, this chapter gives background information of this research, provides a review of literature, and describes the significance of researching sustainable human use of the oceans. More importantly, chapter 1 identifies the knowledge gap of human attitudes towards ocean use in contemporary Chinese society, states our research questions and objectives, and outlines the methodology of this research.

Answers to our research questions are provided from chapter 2 to chapter 5. Chapter 2 depicts a general picture of how coastal Chinese understand marine life and links this public perception to individuals' moral ideologies. By and large, coastal Chinese people hold positive attitudes towards marine life and marine life protection. Individuals are generally aware of the significance of marine life protection. Comparing to men, Chinese women are found to be more concerned about marine life using in coastal society. However, no age difference on attitudes towards marine life is detected throughout our dataset. A similar level of concern about marine life protection is observed among the elderly, the middle-aged and the youth in coastal China. The interaction between age and gender is found to be interrelated with marine life attitudes. For the several usages this research paid special attention (food, medical research, hunting/fishing, use of skin/fur, slaughter), using the skin or fur (from seals and sea otters, for example) is considered as the least tolerable but using marine life for food (i.e. fish, shrimps) or medical research is regarded as relatively more acceptable by citizens in coastal China. Moreover, how people understand the use of marine life is shaped by ethical ideology. Idealistic morality is positively correlated with attitudes towards marine life and relativistic morality correlates negatively. The more people believe in good actions will lead to good results, the more concerned they feel about marine life protection. The more people question the existence of universal moral standards, the less friendly they are towards marine life using. The absolutists, individuals who consider ethical behavior result in good consequences but also conform to universal moral principles, are the most friendly group to marine life among all four ethical positions (subjectivistis, situationists, and exceptionists). Moral ideology is also found to be correlated with all four usages particularly pointed out by the questionnaire except for use in medical research.

Chapter 3 investigates how citizens in coastal China perceive marine life from a different angle, the environmental concern. This chapter starts with researching individuals' core environmental values in coastal Chinese society, and then explores the correlation between attitudes towards marine life and one's core environmental values. As indicated in some earlier scientific studies, our results reveal that coastal citizens have a good awareness of environmental protection in China. On the one hand, people in coastal Chinese society mostly

endorse a pro-ecological worldview and feel concerned about environmental degradation. On the other hand, they are also relatively passive in participating in environmental conservation activities. Men, north China citizens, car owners, and people who believe religious beliefs important in life are found to be less concerned about environmental degradation than their equivalents (females, south China citizens, people who own no car, and people who deem religious beliefs not important in life). Five dimensions of the NEP scale (the reality of limits to growth, anti-anthropocentrism, the fragility of nature's balance, rejection of exemptionism, and the possibility of an eco-crisis) are all positively interrelated with how people perceive marine life among coastal citizens in China. The more people endorse an eco-centric worldview, the more positive they are towards marine life protection. The more people believe in an anthropocentric worldview, the less friendly they are towards marine life. The "anti-anthropocentrism" dimension is discovered to be the most important in understanding marine life protection as it correlated with all four content categories targeted in this study (human moral dominance, food, hunting/fishing, medical research). In addition, public attitudes towards marine life are also uncovered to be associated with several environment-related behaviour, such as beach visits, NGO membership/donation, and transportation preferences.

Chapter 4 focuses on our second central research question by reporting findings regarding public attitudes towards offshore oil and gas drilling in coastal Chinese society. Judging by the outcomes of the online survey, public support to offshore oil and gas drilling remains at a low level in coastal Chinese society. This low-level support does not depend upon the location where offshore drilling is conducted. Expanding offshore oil and gas drilling on Chinese coasts also receives largely negative responses from our respondents. Nonetheless, it is worth noting that a NIMBY (not-in-my-back-yard) mentality exists in citizens' attitudes towards offshore oil and gas drilling in coastal China. Women and people who find religious beliefs are not important in life tend to be less pro-offshore oil and gas drilling than men and people who find them important. Gender, occupation, religious attitude, and dietary habits are uncovered to be predictors of offshore drilling support. Corresponding to the low-level support to offshore drilling, coastal citizens perceived a high risk associated with offshore oil and gas drilling in China. Although some of their risk perceptions may not fully match scientific evidence or the actual situations, the public is deeply concerned about the possibilities of large-scale oil spills and their associated impacts on the marine environment and human health of coastal residents. In terms of trust in scientific information regarding offshore drilling, people hold different levels of confidence on the basis of information sources and contents. It is discovered coastal citizens have more trust in claims from environmental groups than the oil industry, regardless of their contents. Also, coastal residents in China have more confidence in scientific statements that indicate offshore drilling is risky than safe, regardless of the information source.

Our third central research question is answered in chapter 5. Built on findings from the former three chapters and some existing literature, this chapter digs deeper into the context of Chinese society to look for the origins of Chinese attitudes towards marine life and offshore oil and gas drilling. From both historical and cultural aspects, this chapter explains why coastal

Chinese hold certain attitudes and the relative tolerance to consuming and medical use of marine life. Actually, how individuals view the use of marine life and offshore oil and gas drilling reflects three worldviews prevailing in Chinese society: anthropocentrism, collectivism, and pragmatism. Anthropocentrism, collectivism, and pragmatism are deeply rooted in the agriculture-based ancient Chinese society and Confucianism-centered traditional Chinese culture. From a historical outlook, the thousands of years' agrarian ancient Chinese society provided a solid foundation for breeding these three mentalities. The hardships in agriculture production during pre-industrial time and farming based social norms and beliefs fostered the anthropocentric, collectivistic, and pragmatic inclinations among ancient Chinese to increase productivity and withstand outside risks. From the perspective of culture, Confucianism-centered traditional Chinese culture has greatly promoted the prevailing of anthropocentrism, collectivism, and pragmatism in Chinese society. Confucianism is intrinsically a mundane philosophy in which anthropocentrism is part of its kernel. By stressing the values of families, communities, and nations, collectivism is also embedded within the central principles of Confucianism. Pragmatism is integrated into the Confucianism philosophies in the world, nature, and change. In addition to Confucianism, Taoism and Buddhism, two other cultures which has deeply influenced traditional Chinese culture, have contributed to the prevailing of a mentality of pragmatism through their core ideas in Chinese society.

Chapter 6 ends this dissertation with a summary of our main findings, a discussion of insights for sustainable human use of the oceans in China, and reflections on this doctorate research. In this chapter, we explained what we have found throughout the research projects, i.e. human attitudes towards marine life and offshore oil and gas drilling in coastal Chinese society. Based on these findings, we conclude that 1. Promoting sustainable ocean use has a solid social base in China; 2. For marine fishery resources, balancing human needs and marine life protection is significant in terms of the present sustainability challenges; 3. For marine energy resources, establishing correct understanding of offshore drilling is key. In the end, this chapter closes this dissertation by reflecting on the limitations of this research and suggesting future research directions in this area.