

**Investigating urban residents' involvement in biodiversity conservation in protected areas:
Empirical evidence from Vietnam**

by

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Abstract

Biodiversity provides many benefits to humans in general and urban residents in particular. However, the rising population, income, and wildlife product consumption demands contribute to the deliberately organized illegal wildlife trade expansion. Protected areas are designated mainly for biodiversity conservation but face financial constraints for management activities. The increased illegal wildlife trade and lack of financing in protected areas can negatively affect biodiversity levels. Thus, the current dissertation is dedicated to answering the question: “How can we mitigate biodiversity loss in protected areas by better involving urban residents in biodiversity conservation?”

To answer this question, the dissertation comprises three studies and data collection about the psychology and behaviors related to biodiversity and conservation among urban residents.

As most studies about mental constructs about biodiversity are conducted in developed Western countries and among people living in non-urban areas, little is known about the mental constructs of urban residents in Vietnam – a developing Asian country. Thus, the first study explores urban residents’ mental constructs about biodiversity, setting the ground for designing a questionnaire to serve the subsequent two studies. Semi-structured interviews and Grounded Theory were used to acquire and analyze the responses of 38 residents in Ho Chi Minh city and Hanoi capital city, respectively. The results are displayed following these mental constructs: i) biodiversity and biodiversity loss, ii) impacts of biodiversity and biodiversity loss on humans, and iii) human reaction towards biodiversity and biodiversity loss. Besides identifying important conceptual dimensions, The study also found the influence of cultural value, the awareness of multi-stakeholders’ participation, and some misunderstandings in the urban residents’ perceptions. These findings offer in-depth knowledge of biodiversity mental constructs in an understudied context: urban areas in an Asian developing country. Moreover, they also provide insights to design a data collection that serves future studies about the interactions between urban residents and biodiversity concepts.

Based on the first study, web-based data collection was carried out among urban residents in major cities across Vietnam. The dataset consists of 535 urban residents’ responses about their wildlife consumption behaviors, multifaceted perceptions and interactions with biodiversity-related

concepts, and nature-based recreation demand. The data set is constructed with six major categories: 1) wildlife product consumption, 2) general biodiversity perceptions, 3) biodiversity at home and neighborhood, 4) public park visitation and motivations, 5) national park visitation and motivations, and 6) socio-demographic profiles. These resources are expected to support researchers in enriching the literature regarding the role of urban residents in biodiversity conservation and preservation and help policymakers find insights for building up an “eco-surplus culture” among urban residents through effective public communication and policymaking.

The second and third studies performed the Bayesian mindsponge framework (BMF) on the dataset to eventually answer this dissertation’s pivotal question. However, BMF is not fully developed, so the dissertation extended the BMF by explaining the advantages of Bayesian inference and the mindsponge mechanism and how they are well-matched in studying psychological and behavioral issues.

The second study applied BMF to 535 urban residents’ responses to investigate the associations between biodiversity loss perceptions, the attitude towards the prohibition of illegal wildlife consumption, and bushmeat consumption behaviors. It found that people perceiving environmental degradation, losses of economic growth, nature-based recreation opportunities, health, and knowledge as consequences of biodiversity loss were more likely to support the prohibition of illegal wildlife consumption. Although urban residents tended to consume bushmeat less frequently if they perceived losses of economic growth and knowledge as consequences of biodiversity loss, the perception of environmental degradation had the opposite effect on the behavior. Additionally, people that consume bushmeat frequently and those that support the biodiversity-loss mitigation measures seemed to share similar features: high income and educational levels. These paradoxical results hint at the existence of the cultural additivity phenomenon – the willingness to incorporate into one’s mind the new values that might or might not logically contradict their existing core cultural values – on psychology and behavior among Vietnamese urban residents. However, the effects of cultural additivity need further validation in future studies.

The third study applied BMF to 535 urban residents’ responses to examine the associations between biodiversity loss perceptions, conservation endorsement attitude, and willingness to pay in protected areas. It was found that perceived environmental degradation, loss of economic

growth, loss of nature-based recreation opportunities, and loss of knowledge as consequences of biodiversity loss indirectly affect paying willingness through the mediation of the attitude towards conservation. Especially the perceived knowledge loss also has a direct positive influence on the willingness to pay for the entrance fee and conservation. In contrast, perceived loss of health is negatively associated with the attitude towards conservation.

Results of the second and third studies indicate that it is possible to involve urban residents in tackling biodiversity loss in protected areas. This can be done by financing social marketing and demarketing programs, public awareness-raising campaigns, educational activities, and pro-environmental entertaining platforms (e.g., commercial games) to make urban residents perceive the tremendous consequences of biodiversity loss among urban residents (including their self-interest). Given the influence of cultural additivity, it is recommended to sometimes put stricter measures (e.g., financial punishment) into perspective so that urban people can recognize the high “cost” of bushmeat consumption and change their attitudes and behaviors accordingly. If these programs, campaigns, and activities are repeated sufficiently, they can help build an eco-surplus culture among urban residents.

Keywords: *biodiversity perception, urban human, wildlife consumption, biodiversity conservation, nature-based tourism, protected areas, conservation social sciences, self-finance, willingness to pay, Bayesian mindsponge framework*