

Communicating ecological awareness through hiking Mount Argopuro

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Abstract. The primary objective of this research paper is to establish a comprehensive understanding of the processes involved in communicating ecological awareness through hiking Mount Argopuro. This research benefits from employing a qualitative methodology, specifically utilizing a single instrumental case study. The data collection process involves the utilization of primary data obtained from 10 local hikers who serve as key informants. The collection of main data is accomplished through conducting in-depth interviews, while secondary data is obtained through a comprehensive review of relevant literature. The results indicate that the communicating ecological awareness has been achieved by participation in hiking activities, leading to the development of ecologically responsible behaviors such as the protection of natural resources, proper disposal of personal waste, and the adoption of minimalist lifestyles. It has resulted in three distinct categories of outcomes: the establishment of an emotional connection with nature, the attainment of social acceptance within a group setting, and the manifestation of actions aligned with one's personal philosophy toward the preservation and reverence of the natural environment. Drawing upon the environmental communication model, hiking Mount Argopuro presents an opportunity for improving society's capacity to interpret and respond to environmental signals that hold significance for the welfare of both human societies and natural ecosystems.

1 Introduction

Hiking is a widely favored kind of outdoor recreation that is particularly popular among people who possess a deep appreciation for the natural world. It can be defined as the activity of walking a considerable distance on foot in natural environments, typically characterized by the ease of accessibility, little skill and equipment requirements, and the flexibility for individuals to choose the level of terrain difficulty and walking pace [1], [2]. In Indonesia, the activity of hiking can be undertaken either in groups or alone, depending upon the authorization granted by the relevant authorities. Some hiking treks necessitate group participation, while others can be undertaken individually. Certain attributes of an ideal solo hiking encounter can be derived from scholarly investigations centered on seclusion and confidentiality in natural environments which have led to the determination that seclusion in outdoor leisure pursuits can be broadly characterized as a state of tranquility, encompassing the freedom to exercise choice in terms of both the information individuals must process and the conduct expected of them by others [3].

Direct engagement with the natural world is thought to contribute not only to health advantages, but also the enhancement of ecological awareness and concerns. The relationship between outdoor recreation exposure and understanding of various ecological concerns and policies has been observed, particularly among wilderness users [4]. Individuals who have

a stronger sense of connection with the natural environment may exhibit a higher propensity to engage in outdoor activities within natural settings, thereby leading to the acquisition of health advantages and ecological awareness linked with such experiences [5], [6].

Indonesia is widely recognized as a country with exceptional biodiversity, boasting a multitude of both active and dormant mountains, as well as national parks that offer enough opportunities for trekking enthusiasts. Mount Argopuro is a well-known mountain in Indonesia situated within the Hyang Mountains of East Java. It is classified as a volcanic complex and stands at an elevation of 3088 meters above sea level. Presently, Mount Argopuro is considered to be inactive [7], [8]. Although the forest ecosystems on Mount Argopuro's slopes are exceedingly diverse, little is known about the presence of animals in this region. The quality of animal habitats and numbers of some unrecorded species may diminish as a result of widespread poaching, land alteration, and illicit logging by local groups [8].

Mount Argopuro is well recognized as the most extensive hiking trail available for commercial mountain expeditions in Java. According to reports, individuals who engage in regular hiking activities often require a duration of five days to successfully traverse the trail of Mount Argopuro. The increasing prevalence of outdoor activities, particularly hiking, indicates a growing desire among individuals to explore innovative ways of interacting with the natural environment, potentially fostering connections with both others and oneself.

There is numerous research on communicating ecological awareness. Hansen [9] suggest reintegrating the three primary domains of communication ecological awareness pertaining to media and environmental matters. The areas of focus encompassed in his research are the creation and development of media messaging and public communications, the substance and conveyance of media communication, and the impact of media and public communication on the general people's comprehension and engagement with environmental matters. In research conducted by Nazarenko and Kolesnik [10], the focus was on the application of environmental training modes and methods to facilitate the effective organization of the educational process. The aim was to enhance the development of environmental awareness and attitudes among individuals.

While there is a substantial body of research that supports the existence of good associations between exposure to nature and various mental and physical health advantages[2], [4], [11], the specific mechanisms via which ecological awareness is conveyed via hiking remain inadequately comprehended, specifically in the context of hikers in mount Argopuro. Therefore, this research aims to understand communicating Communicating Ecological Awareness through Hiking Mount Argopuro.

2 Literature Review

2.1. Environmental Communication

The study of environmental communication plays a significant role in examining the processes through which individuals acquire knowledge and awareness pertaining to the environment and related issues. The increasing global environmental challenges are evident in several forms of media, including print media, television, radio, and social media, where debates and story pieces frequently highlight these issues daily. The phenomenon is intrinsically linked to the way individuals communicate and receive information pertaining to environmental matters, as well as the subsequent promotion of proactive measures.

The interconnectedness between humans and nature is inseparable from the field of environmental communication, which aims to enhance society's capacity to appropriately interpret and respond to environmental cues that are crucial for the welfare of both human civilization and natural ecosystems [12]. Numerous environmental communication definitions can be found from different perspectives. According to Jurin et al [13], individuals can be environmental communicators since they practically live on earth, which develops a framework for how they give and receive messages from their nature and environment. This definition highlights their natural drive to comprehend nature and their surroundings. They derive meaning from feelings and then discuss these meanings with others which structures three overlapping actions:

environmental communication, environmental education, and environmental interpretation [13, p. 31]

Additionally, Seitz et al [14] bring environmental communication as a diverse role as a discipline of research that draws attention and concern on global, national, and local scales. It is not only the exchange of information, debate, and discussion about pollution, global warming, toxic chemicals, or extinct flora and fauna, but also serves as a strategic method to promoting environmental ideals that connect humans to nature, sustainability, and the earth itself. As a result, research environmental communication must focus on the creation/construction of public and media message communications, the substance and messages of media communication, and the effects of public awareness and political action because of public communication and the media considering the environment [9]. As defined by Pezzullo and Cox [15, p. 38], environmental communication considers language to be a component of communication that actively changes people's understanding, produces meaning, and orients people to a larger world while also doing and saying something. It has shifted to an emphasis on what individuals express (emotions, information, hierarchies, authority, and so on) Additionally, Seitz et al [14] bring environmental communication as a diverse role as a discipline of research that draws attention and concern on global, national, and local scales. It is not only the exchange of information, debate, and discussion about pollution, global warming, toxic chemicals, or extinct flora and fauna, but also serves as a strategic method to promoting environmental ideals that connect humans to nature, sustainability, and the earth itself.

Cox [15] provides a comprehensive analysis about an informal and a formal definition of environmental communication. In an informal context, it means a study of the ways in which individuals communicate about the environment, the effects of this communication on their perceptions of both the environment and them, and therefore on their relationship with the natural world. In a formal context, it may be stated that language serves as a pragmatic and constitutive means by which they comprehend the environment and establish their connections with the natural world. It functions as a symbolic medium that they employ to generate environmental issues and navigate the diverse societal reactions towards them. The pragmatic function of environmental communication encompasses the acts of informing, reminding, persuading, and promising, with the aim of expressing instrumental objectives, while the constitutive function encompasses the act of defining and differentiating the subject matter pertaining to ecological concerns as a crucial component of existence [15].

Environmental communication, through its pragmatic and constitutive functions, allows individuals to choose from a variety of environmental issues. Based on this, environmental communication seeks to raise public understanding of the importance of everyone in addressing environmental concerns, from making ecologically ethical choices on a daily basis to negotiating international agreements. Therefore, environmental communication shapes individual

perceptions of the natural world as well as their interactions with and impacts on it [13].

A significant portion of environmental communication focuses on the geographical locations where individuals reside and operate or the sense of place. Efficient communication entails establishing a connection and establishing relevance with individuals based on their unique perspectives and sense of belonging [13]. It is possible for an individual to lack a physical presence in a location that holds personal significance to them. Individuals may maintain affiliations with locations beyond their current place of residence. Place encompasses both natural factors, such as geophysical characteristics and position, as well as social aspects, including community dynamics and cultural influences.

The concept of "sense of place" revolves around the interpretations and attributions that individuals and collectives assign to a particular geographical location, as well as the distinctive characteristics inherent to that environment. The significance of a concept becomes more profound through the unfolding of events that transpire as an integral component of daily existence and the shared encounters within a particular social group. In order to attain sustainability, it is essential that individuals develop a profound understanding of the Earth as a home. There are three basic dimensions of place as shown on table 1 [16].

Table 1. Basic dimensions of sense of a place

No	Dimensions	Elements
1	Psychological (place attachment)	Use of area for professional or recreational purposes (place dependence)
		Understanding and conception of self within a particular setting; personal history, and anticipated future, within that setting (Place identity)
2	Social (Community and Culture)	Inscription of 'sense of place' through cultural processes
		Social networks within place
		Familial ties to place
		Political and environmental involvement/activism
3	Political/Economic	Local, regional, state, national, political boundaries and norms
		Opportunities for collaborative action focused on place-based interests and needs
		Political and environmental involvement/activism

2.1 Hiking and Environmental Education

Hiking can be considered as part of environmental education. It can engage audience in the process of increasing individuals' understanding of environmental issues and promoting behavioral strategies to address these issues [17]. The underlying principle behind environmental education programs is that the dissemination of information will result in increased awareness and understanding. Enhancing environmental consciousness, competencies, and drive, leading to shifts in mindsets and finally in behavioral patterns, so resolving environmental issues.

A hiking trip often ranges from a minimum duration of two hours to a maximum duration of an overnight excursion spanning two or more days. Hiking takes place in natural environments, particularly in wooded areas. Furthermore, hiking typically entails traversing dirt pathways, but rail routes and trails in rural regions were considered favorable for this activity. It is also linked to the utilization of specialist gear, such as hiking boots, tents, or trail shoes, as well as a daypack or backpack for carrying necessary supplies [3].

Environmental education through hiking is frequently utilized to enhance individuals' understanding of a place by offering information about captivating aspects about their surrounding [18]. Cognitive learning can indeed take place during hiking, and it is vital to remember that hiking paths are specifically built for an audience that is not confined and are carefully structured to provide enjoyment. They are undertaken willingly and are embraced as a recreational pursuit, similar to hiking. Cognitive learning can foster ecological awareness among hikers by focusing on crucial existential issues, including the significance of the environment, the interpretation of hiking indications, physical and psychological readiness, as well as cognitive and social growth [18].

2.3 Ecological Awareness

The availability and sustainability of natural resources must no longer be assumed without careful consideration. The imperative of comprehensively examining, deliberating, and critically analyzing measures to mitigate the alarming pace of environmental degradation in everyday practices is of utmost importance. Engaging in outdoor activities is crucial for cultivating a profound, enduring, and intellectually informed sense of responsibility towards the environment [19]. It provides individuals with a tangible means to develop an understanding of fundamental ecological interdependencies throughout the global ecosystem, as well as strategies for safeguarding these interdependencies.

The main purpose of environmental communication is commonly understood to be the addressing of ecological concerns. The primary channels of environmental communication serve as a prominent platform for the general public to get knowledge about environmental issues and the many approaches taken to confront, debate, and resolve them. Ecological awareness is associated with egoistic, social-altruistic, and bio-spheric value orientations, as well as

attitudes regarding the implications of environmental changes for objects of significance [19], [20]. Numerous scholars and experts have advocated for improvements in human conduct that would exhibit less detrimental effects on the environment [21], [22], [23]. This is due to the significant influence exerted by humans on the Earth's terrestrial, aquatic, and atmospheric domains, surpassing the relative significance of their existence as a solitary species amidst a multitude of others [24]. Through the utilization of their remarkable technological prowess and dexterity, individuals have profoundly transformed their surroundings to align with their personal comfort and imagined desires.

This research tries to understand the ecological awareness pertaining to the motivating influence exerted by three distinct categories of outcomes using basic dimensions of sense of a place. The necessity to address and engage in discussions regarding environmental concerns is evident across various sectors, including corporations, governments, educational institutions, regions, and societies. These discussions should focus on both theoretical and practical approaches to sustainable living, fostering ecological awareness, promoting clean production methods, and embracing the challenges associated with environmental preservation and sustainability. Environmental communication serves as a platform for engaging in profound and significant critical discourse around environmental issues.

3 Methodology

This research utilizes a qualitative methodology, employing a single case study approach. Qualitative research is employed to underscore the comprehension of the underlying relevance pertaining to the "what" and "why" aspects of a subject and research object, with a focus on the acquisition of information through open-ended or semi-structured in-depth interview. The topic questions are derived from environmental communication that raises ecological awareness and sense of place.

The case study approach involves conducting detailed interviews with 10 informants chosen through purposive sampling. The criteria for selecting informants are individuals who have engaged in the activity of hiking Mount Argopuro in the last two years and express a willingness to participate in interviews. The informants list is presented on table 2.

Table 2. List of Informants

No	Name	Gender	Age
1	Jati	Male	27
2	Agus Budi	Male	24
3	Irfan Afwan	Male	23
4	Siti Noer	Female	25
5	Al-Aufa	Male	26
6	Fajri	Male	21
7	Eka Saputri	Female	18
8	Dinda Rahmi	Female	21
9	Nadia Zulfa	Female	23
10	Zaenal	Male	28

Triangulation is a very important part of qualitative research to make sure the data is correct. [25]. The current research uses sources triangulation, which includes 10 informants along with the member checking technique.

On the other hand, a single instrumental case study is a variant of the case study approach that concentrates on a particular issue rather than the case as a whole [26], utilizing only one case for analysis [27]. The procedural framework employed for conducting a case study in this research adheres to the methodology proposed by Creswell [28]. In order to enhance the robustness of the data collected throughout the study, participatory observation was employed. This involves the researcher actively engaging in the hike of mount Argopuro with a group of four informants. Additionally, the data was also gathered through literature review.

Following the completion of the interviews, the acquired data was transcribed into written records known as transcripts, with the purpose of facilitating subsequent analysis. The study employed a manual methodology to create clusters of experience and significance from the transcripts. Transcripts are utilized during the data analysis and categorization process to determine the significance of the information. Data analysis is performed by utilizing data reduction methodologies, finally resulting in the acquisition of a definitive conclusion. The research employed a source triangulation, which involved the use of interviews and direct observation as methods for evaluating the credibility and accuracy of the results.

4 Result and Discussion

4.1. Result

Following the completion of semi-structured in-depth interviews with a total of 10 informants, it was observed that each informant provided multiple identical responses pertaining to the concerns of appreciating nature, fostering solidarity within group settings, and conserving the environment. However, it ought to be noted that each informant possesses distinct core beliefs that are interconnected with their individual life experiences. The findings are succinctly presented in Table 2.

Table 3. Key Values of Ecological Awareness

Informant	Key values of Ecological awareness	Main sense of place
1	Learn about biodiversity	Place attachment
2	Sense of peace in the nature	Place attachment
3	Minimizing personal waste	Political
4	Nature preservation	Political
5	Cultural exchanges	Community & culture
6	Sense of belonging	Place attachment
7	Solidarity & Collectivism	Community & culture
8	Emotional connection with nature	Place attachment
9	Ecologically conscious worldview	Political
10	Call for action in environmental issues	Political

The sense of place that is commonly observed among individuals is the political dimension, which is prominently manifested through their actions. All informants possess pre-existing knowledge of environmental education, thereby leading them to view hiking as a method to enhance their understanding and appreciation of the natural world. Engaging in hiking activities allows them to effectively streamline their possessions, hence facilitating a reduction of their personal waste. Additionally, it is believed by hikers that engaging in this activity fosters an understanding and appreciation for minimalism. The political dimension is likewise intertwined with the imperative of nature preservation, as it is contingent upon individuals' proactive engagement in environmental conservation in order to manifest their knowledge. Furthermore, it is their belief that preservation efforts extend beyond natural environments and encompass urban settings as well, such mitigating pollution,

spreading awareness on social media, and gardening. The political dimension demonstrates a steadfast dedication to taking action on a daily basis due to their heightened ecological consciousness. Furthermore, their ecologically conscious worldview is closely associated with the belief that nature is a fundamental component of life, aligning with the principles of ecocentrism.

The 10th informant is employed by a non-governmental organization (NGO) that focuses on promoting and facilitating the involvement of young individuals in the preservation of natural environments. Hence, it is evident that they employ a persuasive strategy to encourage those around them to act on environmental matters, such as advocating for the reduction of plastic waste and addressing the issue of global warming. Hiking, therefore, is perceived to enhance ecological consciousness.

Place attachment is the second most frequently stated dimension pertaining to a sense of place. All informants hold the belief that the preservation of nature is of utmost importance; yet it is worth noting that only four informants exhibit a sense of place attachment towards it. They exhibit a keen interest in acquiring knowledge about the biodiversity of a particular region. Additionally, they express a desire to experience a profound sense of tranquility amidst natural surroundings, establishing a sense of belongingness and cultivating an emotional bond with Mount Argopuro. The informants who are selecting a site of emotional connection reside in close proximity to Mount Argopuro. Consequently, individuals perceive it as the backyard of their home that needs to be carefully explored. The reason for their decision to undertake a hike on Mount Argopuro is mostly attributed to the mountain's rich and varied wildlife.

One aspect of the sense of place that is often overlooked or underemphasized is the component of community and culture. According to some informants, engaging in hiking activities serves as a means of socializing with friends and acquaintances, as well as gaining insights into the cultural practices of the individuals they come into contact with. Nevertheless, during the observation, it was noted that the four hikers were previously unacquainted and had only recently initiated their acquaintance online. A new friendship was established as they mutually assisted one another in their preparations for the hike. This facilitates the acquisition of knowledge regarding interpersonal communication and the comprehension of individuals from diverse backgrounds.

4.2 Discussion

Based on the results it is found that Mount Argopuro serves not just as a site for leisure activities, but also as a means to gain insight into one's place within nature. Individuals hold the belief that engaging in hiking activities can enhance their bond with the natural environment, provided that the intention behind hiking extends beyond simply leisure and encompasses conservation efforts. In order to foster a more sustainable society, it is advisable to promote the engagement of hikers in a diverse range of ecological awareness and action [29] This can potentially lead to positive environmental consequences and mitigate the magnitude of global environmental issues. The distances covered on a daily basis significantly influenced the perceptual abilities of the surrounding individuals. Significant reductions in observation were observed whenever there was a need to augment the pace of walking. Engaging in leisurely hiking can enhance one's ability to observe and cultivate self-awareness [18].

Additionally, a good hiker is characterized as an individual who engages in hiking activities with a genuine appreciation for the natural environment, demonstrating a conscientious commitment to refrain from causing harm to nature [30]. This recognition stems from the understanding that the preservation of nature holds significant value for the well-being and sustainability of future generations. Consequently, by engaging in through hiking, individuals can develop a deeper understanding of their connection to the natural world and cultivate a sense of place identification. The emphasis of an ecological awareness of one's surroundings has the potential to foster ecologically conscious perspectives and subsequent action as part of the political dimension of sense of a place.

Engaging in hiking activities has the potential to foster a deep local consciousness with one's surroundings, ultimately contributing to the cultivation of a heightened awareness and appreciation of the local environment. The foundation of deep local consciousness is in the observation of biogeographical characteristics inherent to specific locations, encompassing both the immediate and precise aspects, as well as the broader interconnections within the ecosystem [31]. The idea of a sense of place presents the potential for individuals to reestablish a connection with an ecological system, thereby transcending the modern state's inclination to exert authority over untamed environments. The location, when characterized by its biogeographical attributes, serves as a prime example of the self-organization and independent actions exhibited by the non-human entities. The concept of wilderness can be understood as a complex ecological relationship inside a specific geographical location, which grants individuals

access to a comprehensive environment sometimes known as the sacred.

All informants demonstrate responses related to ecological awareness, physical exertion, group cohesion, and physical activity. Several values that have surfaced include self-fulfillment, self-reliance, the pursuit of happiness in life, and the cultivation of positive interpersonal relationships. They admit hiking correlates with physical activity, overall well-being, and the subjective experience of pleasure and fulfillment in life. There were further robust connections observed between the outdoors and environmental awareness, as well as between the outdoors and self-awareness. They also claimed to have strong interactions and camaraderie, whereas the latter was found to be associated with the experience of happiness and fulfillment in one's life. In general, the informants suggest that individuals engage in hiking relate with building ecological awareness, joy from life experiences, as well as to foster meaningful interpersonal connections.

The motivation behind hiking Mount Argopuro might be understood as stemming from the key views of ecological awareness. While it is evident that Mount Argopuro is not a suitable journey for novice hikers, there persists a belief that adequate preparation can enable individuals of any skill level to undertake the hike. Three informants acknowledge that they have engaged on several visits to Mount Argopuro with the intention of attaining a state of tranquility, acquiring knowledge about the natural environment, and fostering a profound connection with nature.

It was evident that informants exhibited a strong sense of solidarity, collectivism, and an ecologically conscious worldview while doing their hiking. They encourage one another not to litter and to reduce their waste. They spent four days together and talked about many things from personal stories to their concerns on environment such as plastics waste, air pollution, and how they can act. Additionally, sharing personal stories and similar concerns on environmental degradation can build a collective bond on tackling environmental issues. Hiking then can be seen as an activity to enhance knowledge, alter perceptions, boost motivation, reinforce perceived norms or values, or offer social models or information regarding the behavior of others.

Studies in the field of environmental research have demonstrated that just improving people's knowledge about environmental issues does not effectively lead to changes in behavior [32]. However, placing prompts, which are modest indicators with a can be effective. Moreover, when the information given is precisely customized to address the specific requirements and knowledge gaps of individuals, the impact is more pronounced [33]. Strategies for communication in hiking should be implemented

by engaging in natural discussions and sharing intimate stories in order to promote and reinforce values and norms that foster ecological awareness.

Hiking possesses a profound significance that establishes a connection between individuals and nature. It can be regarded as an environmental education program, similar to field trips, camping, and adventure activities. The primary objective of such programs is to foster an individual's emotional connection with the natural environment, enhance their environmental awareness and outdoor conduct, and facilitate the development of their social relationships, all through firsthand experiences [11]. Hiking is closely related with nature that encompasses several interpretations. Some individuals define it as encompassing all non-human entities on Earth, including animals, plants, physical features, and processes that are not of human origin while conversely, others may broaden this definition to include human-designed features that contain significant natural aspects, such as parks and gardens [34].

Cultural exchange plays a significant role in fostering ecological consciousness, especially in a social setting. According to the informants, discussing the outdoors and environment in a group while hiking can foster both interpersonal bonds among individuals and their connection with the natural world. A hiking group can also function as a community, engaging in regular discussions and taking proactive measures to conserve the environment.

Cultural exchange in a hiking can be considered as part of community involvement in environmental communication. Environmental communication is rooted in the cultural practices of individuals, particularly in traditional civilizations and their patterns of social interaction [35]. The environmental practice is evident in the intergenerational transmission, the seasonal significance, and the reverence that traditional cultures attribute to farming and other types of natural resource utilization. Therefore, the relationship between nature and culture is perceived as a continuum rather than a dichotomy.

The concept of cultural exchange is prevalent in numerous cultures and is also a fundamental tenet of reciprocity. In order to cultivate a culture of sharing, individuals must actively engage in meaningful interactions where they exchange knowledge and talents, hence fostering the development of trust [36]. By engaging in through hiking, the process of cultural exchange is integrated into environmental communication in order to promote ecological consciousness.

The cognitive construct of experiencing features or objects in environments involves the perception of objects and features as either pleasant or unpleasant. The act of perceiving an environment encompasses more than visual

observation, as it encompasses the processes of knowing, believing, and recognizing. The processes are of a cognitive nature and are contingent upon the individual's background knowledge, learning ability, and reasoning capacities [37].

Hiking serves as a means of environmental communication, allowing individuals to interact with nature and convey ecological awareness messages. Additionally, it facilitates group communication. By prioritizing environmental education during hiking activities, it can be effectively utilized as a program to captivate individuals' interest and increase their consciousness regarding the significance of nature, location, and the interconnections between humans and the natural world. Nevertheless, the successful implementation of this program necessitates the establishment of a policy framework and government support. Additionally, the hiking community should collaborate to effectively promote ecological awareness among its members through hiking activities.

5 Conclusion

Involving in direct encounters with nature, such as taking on a hike along Mount Argopuro, has advantageous outcomes due to the potential for establishing a profound connection with the surrounding ecosystem. Hiking has the potential to be advantageous in the advancement of ecological awareness such as the preservation of natural resources, proper disposal of personal waste, and the adoption of minimalist lifestyles. It has resulted in three distinct categories of outcomes as sense of place: the establishment of an emotional connection with nature, the attainment of social acceptance within a group setting, and the manifestation of actions aligned with one's personal philosophy toward the preservation and reverence of the natural environment.

References

- [1] D. Mitten, J. R. Overholt, F. I. Haynes, C. C. D'Amore, and J. C. Ady, "Hiking: A Low-Cost, Accessible Intervention to Promote Health Benefits," *American Journal of Lifestyle Medicine*, vol. 12, no. 4. SAGE Publications Inc., pp. 302–310, Jul. 01, 2018. doi: 10.1177/1559827616658229.
- [2] M. Goldenberg and K. E. Soule, "Outcomes of hiking the pacific crest trail," *Journal of Outdoor Recreation, Education, and Leadership*, vol. 6, no. 1, pp. 44–54, Apr. 2014, doi: 10.7768/1948-5123.1177.

- [3] T. G. Coble, S. W. Selin, and B. B. Erickson, "Hiking alone: Understanding fear, negotiation strategies and leisure experience," *J Leis Res*, vol. 35, no. 1, pp. 1–22, 2003, doi: 10.18666/jlr-2003-v35-i1-608.
- [4] C. C. Geisler, B. O. Martinson, and E. A. Wilkening, "Outdoor Recreation and Environmental Concern: A Restudy," *Rural Sociological Society*, vol. 42, no. 2, pp. 241–249, 1977.
- [5] K. P. Tam, "Concepts and measures related to connection to nature: Similarities and differences," *J Environ Psychol*, vol. 34, pp. 64–78, Jun. 2013, doi: 10.1016/j.jenvp.2013.01.004.
- [6] E. K. Nisbet, J. M. Zelenski, and S. A. Murphy, "Happiness is in our Nature: Exploring Nature Relatedness as a Contributor to Subjective Well-Being," *J Happiness Stud*, vol. 12, no. 2, pp. 303–322, Apr. 2011, doi: 10.1007/s10902-010-9197-7.
- [7] A. Singarimbun, E. Z. Gaffar, and P. Tofani, "Modeling of reservoir structure by using magnetotelluric method in the area of Mt. Argopuro, East Java, Indonesia," *Journal of Engineering and Technological Sciences*, vol. 49, no. 6, pp. 833–847, 2017, doi: 10.5614/j.eng.technol.sci.2017.49.6.9.
- [8] N. Ayu Aryanti *et al.*, "STATUS KONSERVASI JENIS BURUNG DI KAWASAN LERENG GUNUNG ARGOPURO, PROBOLINGGO Conservation Status of Birds around Argopura Mountain, Probolinggo," 2017. [Online]. Available: <http://research-report.umm.ac.id/index.php/>
- [9] A. Hansen, "Communication, media and environment: Towards reconnecting research on the production, content and social implications of environmental communication," *Int Commun Gaz*, vol. 73, no. 1, pp. 7–25, Feb. 2011, doi: 10.1177/1748048510386739.
- [10] A. V. Nazarenko and A. I. Kolesnik, "Raising environmental awareness of future teachers," *International Journal of Instruction*, vol. 11, no. 3, pp. 63–76, Jul. 2018, doi: 10.12973/iji.2018.1135a.
- [11] I. E. Palmberg and J. Kuru, "Outdoor activities as a basis for environmental responsibility," *Journal of Environmental Education*, vol. 31, no. 4, pp. 32–36, 2000, doi: 10.1080/00958960009598649.
- [12] R. Cox, "Nature's 'Crisis Disciplines': Does Environmental Communication Have an Ethical Duty?," *Environ Commun*, vol. 1, no. 1, pp. 5–20, May 2007, doi: 10.1080/17524030701333948.
- [13] R. R. Jurin, D. Roush, and J. Danter, *Environmental communication: Skills and principles for natural resource managers, scientists, and engineers*. Springer Netherlands, 2010. doi: 10.1007/978-90-481-3987-3.
- [14] E. Seitz, T. P. Wagner, and L. Lindenfeld, "Environmental Communication as a Nexus," *Proceedings of the 10th Biennial Conference on Communication*, no. University of Maine, 2010.
- [15] R. Cox and P. C. Pezzullo, *Environmental Communication and the Public Sphere*. California: SAGE Publications India Pvt, 2018.
- [16] F. Steele, *The sense of place*. Boston: CBI, 1981.
- [17] F. van Staden, "Implementing Socially Responsive Forestry Extension Programmes: Towards A Model," *Southern Africa Journal of Environmental Education*, vol. 16, pp. 3–9, 1996.
- [18] G. Ferreira, "Environmental education through hiking: A qualitative investigation," *Environ Educ Res*, vol. 4, no. 2, pp. 177–185, 1998, doi: 10.1080/1350462980040205.
- [19] E. Cole, "Fostering Ecological Awareness : Art and Learning ," *Child Educ*, vol. 68, no. 5, pp. 285–289, Aug. 1992, doi: 10.1080/00094056.1992.10521767.
- [20] J. A. Corraliza and S. Collado, "Ecological awareness and children's environmental experience," *Papeles del Psicologo*, vol. 40, no. 3, pp. 190–196, Sep. 2019, doi: 10.23923/pap.psicol2019.2896.
- [21] M. Sarco-Thomas, "Improvising in Ruyang: Community Art as Ecological Practice," *Journal of Arts and Communities*, vol. 1, no. 1, 2009, doi: 10.1386/jaac.1.1.45/1.
- [22] M. St and T. P. Maxwell, "Considering Spirituality INTEGRAL SPIRITUALITY, DEEP SCIENCE, AND ECOLOGICAL AWARENESS," *Zygon*, vol. 38, no. 2, 2003, [Online]. Available: www.worldwatch.org
- [23] F. Berkes, "Environmental governance for the anthropocene? Social-ecological systems, resilience, and collaborative learning," *Sustainability (Switzerland)*, vol. 9, no. 7, Jul. 2017, doi: 10.3390/su9071232.
- [24] R. Gifford and A. Nilsson, "Personal and social factors that influence pro-environmental concern and behaviour: A review," *International Journal of Psychology*, vol. 49, no. 3. Wiley-Blackwell Publishing Ltd, pp. 141–157, 2014. doi: 10.1002/ijop.12034.
- [25] N. K. Denzin and Y. S. Lincoln, *The SAGE Handbook of Qualitative Research*, 3rd ed. California: Sage Publications, Inc, 2005.
- [26] R. K. Yin, *Case Study Research: Design and Method*, 5th ed. California: SAGE, 2014.
- [27] J. W. Creswell and J. D. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Los Angeles: Sage Publication, 2018.
- [28] J. W. Creswell and C. N. Poth, *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*. London: SAGE Publications, 2018.
- [29] H. Sun, Q. Zhang, W. Guo, and K. Lin, "Hikers' pro-environmental behavior in

- national park: Integrating theory of planned behavior and norm activation theory,” *Frontiers in Forests and Global Change*, vol. 5, Dec. 2022, doi: 10.3389/ffgc.2022.1068960.
- [30] E. Hill, M. Goldenberg, and B. Freidt, “Benefits of Hiking: A Means-End Approach on the Appalachian Trail,” *Journal of Unconventional Parks*, vol. 2, no. 1, pp. 19–27, 2009, [Online]. Available: https://digitalcommons.odu.edu/hms_fac_pubs/89
- [31] L. Filipova, *Ecocriticism and the Sense of Place*. New York: Routledge, 2022. [Online]. Available: <https://www>.
- [32] L. Steg and C. Vlek, “Encouraging pro-environmental behaviour: An integrative review and research agenda.,” *J Environ Psychol*, vol. 29, no. 3, pp. 309–317, 2009.
- [33] W. Abrahamse, L. Steg, C. Vlek, and T. Rothengatter, “A review of intervention studies aimed at household energy conservation,” *J Environ Psychol*, vol. 25, no. 3, pp. 273–291, 2005.
- [34] K. Fretwell and A. Greig, “Towards a better understanding of the relationship between individual’s self-reported connection to nature, personal well-being and environmental awareness,” *Sustainability (Switzerland)*, vol. 11, no. 5, p. 1386, Mar. 2019, doi: 10.3390/su11051386.
- [35] A. G. Flor, *Environmental communication: Principles, approaches and strategies of communication applied to environmental management*. Quezon: University of Philippines Open University., 2004.
- [36] U. Sundar Harris, “Engaging communities in environmental communication,” *PACIFIC JOURNALISM REVIEW*, vol. 23, no. 1, 2017.
- [37] P. Chhetri, C. Arrowsmith, and M. Jackson, “Determining hiking experiences in nature-based tourist destinations,” *Tour Manag*, vol. 25, no. 1, pp. 31–43, 2004, doi: 10.1016/S0261-5177(03)00057-8.