Humanitatis: Journal of Language and Literature
SK Dirjen DIKTI Nomor 36/E/KPT/2019
Vol. 12, No. 2, June 2026, pp. 251-268
ISSN (Print) : 2338-9362
ISSN (Online) : 2477-2267

Conceptual Metaphors of Nature in Sasak Language: A Cognitive Semantic Analysis of Indigenous Environmental Knowledge

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Received: 3rd June 2026 | Revised: 19th June 2026 | Accepted: 30th June 2026
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Abstract

Indigenous languages have been shown to play a crucial role in preserving ecological knowledge, cultural memory, and community identity. However, the semantic dimensions through which environmental knowledge is encoded in many indigenous languages remain underexplored, particularly in underrepresented Austronesian languages such as Sasak. The specific aims of this study are threefold: first, to identify the semantic categories of environmental concepts; second, to examine the conceptual metaphors underlying indigenous ecological knowledge; and third, to explain how these semantic structures reflect Sasak cultural cognition and identity. The present research employed a qualitative descriptive method within an interpretive paradigm. Data were collected from 25 native Sasak speakers selected through purposive sampling from East, Central, and West Lombok. The data comprised environmental vocabulary, proverbs, folklore narratives, oral traditions, and customary expressions gathered through semi-structured interviews, participant observation, and documentary analysis. The findings reveal that environmental knowledge in the Sasak language is organised into five interconnected semantic domains: water resources, landscapes, flora, fauna, and environmental processes. Of these domains, the water-related domain is particularly prominent, reflecting the ecological and cultural significance of water in Sasak society. The study further identifies several conceptual metaphors in which environmental phenomena function as source domains for abstract cultural meanings, including social harmony as ecological balance, causes as natural forces, and human identity as a rooted tree. These metaphorical structures illustrate how environmental observations are transformed into cognitive models for interpreting social relationships, moral values, and collective responsibilities. Furthermore, the analysis of environmental concepts embedded in proverbs, folklore, and cultural narratives reveals shared conceptualisations that emphasise harmony, interdependence, environmental stewardship, and communal identity.

Keywords: Cognitive Semantics; Conceptual Metaphor Theory; Cultural Linguistics; Indigenous Ecological Knowledge; Sasak Language.

How to Cite:
Syamsurrijal, S., Suhendra, E., Syarifaturrahman, W. K., & Muhlisin, M. (2026). Conceptual Metaphors of Nature in Sasak Language: A Cognitive Semantic Analysis of Indigenous Environmental Knowledge. *Humanitatis : Journal of Language and Literature*, *12*(2), 251-268.

ISSN (Print) : 2338-9362
ISSN (Online) : 2477-2267

1. INTRODUCTION

Language is one of the most fundamental systems through which human beings construct, organise, and communicate meaning (Ellis, 2019). In addition to its communicative function, language is a cognitive instrument that enables individuals and communities to conceptualise reality, categorise experiences, and interpret their social and physical environments. Contemporary linguistic scholarship increasingly recognises that meaning is not an inherent property of linguistic forms. Instead, it emerges through the dynamic interaction between language, cognition, culture, and lived experience. This perspective positions language as a repository of collective knowledge, reflecting the ways in which communities perceive, understand, and engage with the world around them (Al Maawali, 2022; Zamiri & Esmaeili, 2024).

Within this framework, indigenous and regional languages occupy a particularly significant position because they preserve culturally specific conceptualisations that may not be represented in dominant national or global languages. Indigenous languages encode unique systems of knowledge accumulated through generations of interaction with specific ecological, social, and cultural environments. Consequently, the semantic structures embedded within these languages offer valuable insights into the cognitive processes and cultural models that shape human understanding. Preserving and investigating indigenous semantic systems therefore contributes to linguistic inquiry and broader discussions concerning cultural heritage, epistemological diversity, and sustainable knowledge transmission (Mazzocchi, 2022; Tella et al., 2025).

The growing pressures of globalisation, urbanisation, and linguistic homogenisation have heightened concerns about the future of indigenous languages around the world (Sabbaghian & Oloumi, 2021; Saha, 2022). International organisations, including UNESCO, have repeatedly emphasised that the loss of a language represents more than the disappearance of a communication system. It also entails the erosion of cultural memory, traditional ecological knowledge, local wisdom, and collective identity. As languages become endangered or marginalised, the conceptual frameworks embedded within them may gradually disappear, reducing the diversity of human knowledge and limiting opportunities to understand alternative ways of conceptualising reality. In this context, semantic research plays a crucial role in enabling scholars to document and analyse the cognitive and cultural knowledge encoded within linguistic systems before it becomes inaccessible.

One language that warrants greater scholarly attention is Sasak, an Austronesian language predominantly spoken on Lombok Island in Indonesia. As the primary language of the Sasak ethnic community, Sasak serves as both a medium of everyday communication and a carrier of cultural values, social norms, traditional practices, and indigenous knowledge systems (Szombathy, 2021). It reflects centuries of interaction between the Sasak people and their natural environment, resulting in a rich lexical, metaphorical, and conceptual repertoire. Through oral traditions, ritual expressions, agricultural terminology, and local narratives, Sasak speakers have developed sophisticated ways of representing social and ecological realities (Nasri et al., 2024; Noortyani et al., 2023).

From a linguistic perspective, Sasak is an important subject of study within the field of Austronesian linguistics due to its dialectal diversity, historical development, and sociocultural significance. Previous studies have documented various aspects of Sasak phonology, morphology, syntax, dialectology, and sociolinguistic variation. These investigations have provided valuable insights into language structure, maintenance, and identity. However, despite the growing body of literature on Sasak linguistics, comparatively little attention has been devoted to the language's semantic dimensions. In particular, the ways in which Sasak speakers conceptualise environmental knowledge and encode ecological experiences through linguistic meaning remain insufficiently explored.

Environmental knowledge is one of the most valuable forms of indigenous knowledge because it reflects the long-term interaction between communities and their ecosystems (Mazzocchi, 2020; Thompson et al., 2020). Traditional societies often develop a deep understanding of environmental processes, resource management, agricultural practices, biodiversity, and ecological relationships (Sinthumule, 2023). Such understandings are frequently embedded within language through specialised vocabulary, figurative expressions, semantic categories, oral narratives, and metaphorical structures. Consequently, language serves as a mechanism for storing, transmitting,

and reproducing ecological knowledge across generations.

In the Sasak community, environmental knowledge has historically played a central role in shaping social organisation and cultural practices. Agricultural activities, traditional irrigation systems, forest management practices, seasonal cycles, and ritual ceremonies have all contributed to the development of a unique understanding of nature and the relationship between humans and the environment. These understandings are reflected in linguistic expressions that encode environmental observations, ecological classifications, and cultural interpretations of natural phenomena. However, rapid socioeconomic transformation, the expansion of tourism, technological modernisation, and an increasing reliance on national and global languages have altered language usage patterns among younger generations. Consequently, traditional ecological concepts embedded in the Sasak language may face difficulties in being transmitted across generations (Ginting et al., 2025).

Recent developments in cognitive linguistics provide powerful analytical tools for investigating the relationship between language, cognition, and culture in indigenous contexts. Cognitive semantics, in particular, offers a theoretical framework for understanding how linguistic meaning emerges from conceptual structures rooted in human experience (Whittle et al., 2023). Rather than treating meaning as an abstract linguistic property, cognitive semantics emphasises the role of embodiment, conceptualisation, categorisation, and cultural knowledge in shaping semantic systems. This approach allows researchers to explore how environmental concepts are organised cognitively and represented linguistically within specific cultural communities.

Building on this, Conceptual Metaphor Theory suggests that metaphor is not merely a stylistic device but also a key mechanism of human thought. According to Clark (2024), abstract concepts are often understood through mappings from more concrete domains of experience. These metaphorical mappings reveal how individuals and communities structure knowledge, reason about complex phenomena, and construct shared understandings of reality. In indigenous contexts, conceptual metaphors can offer valuable insights into culturally grounded models of environmental perception and ecological interaction (Datta, 2015; Ibarretxe-Antuñano, 2013; Raymond et al., 2013).

Recent studies have increasingly highlighted the importance of language as a repository of ecological knowledge and cultural cognition. A systematic review of the extant literature on the subject was conducted by Thompson et al. (2020), who found that indigenous languages contain detailed ecological knowledge that supports biodiversity management and environmental sustainability. Utilising a systematic literature review approach, the study demonstrated that local linguistic knowledge contributes significantly to environmental decision-making processes.

In a similar vein, Mazzocchi (2020) examined the relationship between indigenous knowledge and sustainability through a conceptual and interdisciplinary lens. The findings indicated that environmental knowledge embedded in indigenous cultural systems provides alternative epistemological perspectives for understanding human–nature relationships. The study emphasised that indigenous knowledge systems constitute valuable resources for sustainable environmental governance.

From a cognitive linguistic perspective, Ibarretxe-Antuñano (2013) investigated the relationship between conceptual metaphor and culture through a cross-cultural cognitive semantic analysis. The study found that metaphorical systems are strongly influenced by culturally specific experiences and environmental contexts. Environmental phenomena frequently function as the basis through which social values, moral principles, and collective beliefs are conceptualised. These findings suggest that conceptual metaphors provide important insights into culturally grounded cognitive structures.

Sharifian (2017) further developed the framework of Cultural Linguistics by examining how cultural conceptualisations are encoded in language. Utilising qualitative analyses of linguistic and cultural data from diverse speech communities, the study demonstrated that language embodies shared cultural schemas, categories, and metaphors that reflect collective cognition and identity. The findings confirmed that linguistic meanings cannot be separated from the cultural knowledge systems in which they are embedded.

In a recent study, Hubbi (2024) utilised a qualitative ethnolinguistic approach to analyse ecological in-

ISSN (Print) : 2338-9362
ISSN (Online) : 2477-2267

telligence in Sasak folklore. The study found that Sasak narratives contain rich environmental values related to conservation, ecological balance, and sustainable interaction with nature. It demonstrated that environmental elements function not only as narrative settings but also as carriers of cultural wisdom and ecological ethics. In a similar vein, Syamsurrijal et al. (2023) conducted a semiotic analysis of Sasak proverbs, revealing that traditional expressions serve as repositories of moral values, social norms, and collective cultural knowledge that continue to guide community behaviour.

Despite the significant contributions of these studies to the understanding of indigenous knowledge, cultural cognition, and environmental discourse, several limitations remain. A substantial body of research has been dedicated to the study of ecological knowledge, folklore, cultural values, and environmental sustainability. However, limited attention has been paid to the semantic organisation of environmental concepts and the conceptual metaphors that structure indigenous ecological knowledge in the Sasak language. Moreover, to the best of the author's knowledge, no previous study has systematically integrated Cognitive Semantics, Conceptual Metaphor Theory, and Cultural Linguistics to examine how environmental meanings are linguistically represented and how they contribute to the construction of Sasak cultural identity. This gap provides the rationale for the present study.

The objectives of the present study are threefold: first, to identify and analyse the semantic categories of environmental concepts in the Sasak language; second, to examine the conceptual metaphors that structure indigenous ecological knowledge among Sasak speech communities; and third, to explain how these semantic structures reflect indigenous environmental knowledge and Sasak cultural identity. Through these objectives, the research seeks to reveal the relationship between language, ecological experience, and cultural cognition as represented in Sasak environmental expressions.

2. RESEARCH METHOD

The present study employed a qualitative descriptive method grounded in the theoretical frameworks of Cognitive Semantics and Conceptual Metaphor Theory. The qualitative approach was selected because the study sought to explore and interpret the meanings, conceptual structures, and cultural representations embedded in environmental expressions in the Sasak language (Shin et al., 2022; Syamsurrijal et al., 2023). This approach eschews the quantitative measurement of variables and instead emphasises an understanding of how linguistic meanings are constructed through cultural experience, social interaction, and ecological knowledge. The study employed qualitative analysis to examine the semantic categories, conceptual metaphors, and cultural conceptualisations reflected in Sasak environmental discourse.

Furthermore, the study integrated Cognitive Semantics, Frame Semantics, and Cultural Linguistics to analyse how environmental concepts are organised and represented within the Sasak linguistic system. This multidimensional approach enabled a comprehensive examination of the relationship between language, cognition, culture, and indigenous ecological knowledge.

Participants were selected using purposive sampling techniques based on their linguistic competence, cultural knowledge, and active use of the Sasak language. Twenty-five native Sasak speakers who were recognised within their communities as knowledgeable about local traditions, environmental practices, and oral cultural heritage were involved in the study. The participant selection criteria are presented in Table 1.

Table 1. Participant Selection Criteria

Criteria	Description
Ethnicity	Sasak
Language Competence	Native Sasak speakers
Age Range	30–70 years
Residence	East Lombok, Central Lombok, and West Lombok
Cultural Knowledge	Familiarity with local traditions and environmental practices
Number of Participants	25 informants

DOI: 10.30812/humanitatis.v12i2.6485

ISSN (Print) : 2338-9362
ISSN (Online) : 2477-2267

The participants were selected on the basis of ethnicity, language competence, age, place of residence, and cultural knowledge, as presented in Table 1. The present study involved 25 native Sasak speakers aged between 30 and 70 years from East Lombok, Central Lombok, and West Lombok. These criteria were applied to ensure that the participants possessed both linguistic competence and a deep understanding of indigenous environmental concepts.

The participants were selected on the basis of their extensive knowledge of the traditional Sasak language and indigenous environmental concepts. Community elders, traditional leaders, farmers, cultural practitioners, and experienced speakers were prioritised because they regularly use environmental expressions in both cultural and everyday contexts. Their involvement provided access to a wide range of environmental knowledge embedded within Sasak linguistic and cultural practices.

Prior to data collection, all participants were informed about the objectives of the study and voluntarily agreed to participate. They were also provided with information regarding the procedures involved in the research and their rights as participants. The research was conducted in strict accordance with ethical principles, including the maintenance of confidentiality, anonymity, and the protection of participants' rights throughout the study.

Multiple qualitative techniques were employed to ensure comprehensive coverage of linguistic and cultural data related to environmental knowledge. These techniques enabled the collection of data from different sources and communicative contexts. Consequently, the study was able to capture both linguistic forms and the cultural meanings associated with environmental concepts.

Documentary data were collected to complement the findings obtained from interviews and observations. The dataset comprised six sources: traditional folklore narratives, Sasak proverbs and sayings, oral traditions and ritual speeches, local cultural manuscripts, community archives, and social media texts produced by Sasak speakers. These sources provided evidence of semantic patterns, conceptual metaphors, and cultural representations related to environmental knowledge. The inclusion of digital texts also enabled the examination of how environmental meanings are maintained and adapted within contemporary communication contexts.

The data analysis was conducted using an iterative and systematic process based on qualitative semantic analysis and the identification of conceptual metaphors. This analytical framework was employed to examine both the semantic organisation of environmental concepts and the cognitive structures underlying them. As a result, the analysis was able to reveal the relationship between linguistic expressions, cultural knowledge, and environmental experience.

The data analysis was conducted in six stages. First, data reduction was undertaken by systematically selecting environmental expressions that were relevant to the research objectives. Second, coding was performed to organise the data and identify important lexical and semantic elements. Third, the data were grouped through semantic categorisation based on similarities in meaning and thematic content. Fourth, conceptual metaphors were identified in accordance with Conceptual Metaphor Theory to determine the source and target domains of each metaphor. Fifth, the identified metaphors were interpreted to facilitate an understanding of their cultural meanings and functions within Sasak society. Finally, the findings were validated through consultation with native speakers and cultural experts to ensure their accuracy and credibility.

3. FINDINGS AND DISCUSSION

3.1. Semantic categories of environmental concepts in the Sasak language

Analysis of the collected data revealed four primary semantic domains that organise environmental knowledge within the Sasak language: water-related concepts, landscape and geographical concepts, flora and fauna concepts, and environmental process concepts. These domains collectively illustrate how ecological knowledge is systematically encoded within the Sasak linguistic system. Together, they reflect the community's long-term interactions with the natural environment and demonstrate the close relationship between language, culture, and ecological experience.

Doi: 10.30812/humanitatis.v12i2.6485

ISSN (Print) : 2338-9362
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Table 2. Semantic Categories of Environmental Concepts in Sasak Language

Semantic Domain	Sasak Lexical Items	Indonesian Equivalent
Water Resources	aiq, gawah, segare, empaq, aik mate, aiq puteq	air, hutan, laut, danau, mata air, air jernih
Landscape	gunung, tunjung, tanaq, batu, pesisi, Rinjani	gunung, bukit, tanah, batu, pantai, Gunung Rinjani
Flora	kayuq, bunge, daun, akar, buak	pohon, bunga, daun, akar, buah
Fauna	manuk, bejuluk, mpak, kao, sampi, jaran	ayam, lebah, ikan, kerbau, sapi, kuda
Environmental Processes	angin, ujan, panas, peteng, terang, ombak	angin, hujan, panas, gelap, terang, gelombang

As demonstrated in Table 2, the environmental lexicon of the Sasak language can be categorised into five semantic domains: water resources, landscape, flora, fauna, and environmental processes. The diversity of lexical items within these domains demonstrates the richness of the indigenous ecological knowledge embedded in the Sasak linguistic system. This lexicon functions not only as a means of communication but also as a repository of environmental knowledge, cultural values, and community experiences related to the natural world.

The findings suggest that water-related terminology occupies a particularly prominent position in the Sasak environmental lexicon. The presence of numerous terms referring to water sources and aquatic environments highlights the ecological importance of water in Sasak culture. Terms such as *aiq* (water), *aik mancur* (spring water), and *aiq puteq* (clear water) demonstrate semantic distinctions that reflect local environmental knowledge and resource management practices.

Similarly, landscape-related terminology reveals the close relationship between Sasak communities and the physical environment of Lombok Island. Terms such as *gunung* (mountain), *pesisi* (beach), and *Rinjani* (Mount Rinjani) serve as more than mere geographical references; they also function as cultural symbols associated with identity, spirituality, and collective memory.

3.2. Conceptual metaphors underlying indigenous ecological knowledge

Analysis of Sasak proverbs revealed several recurring conceptual metaphors through which environmental concepts are used to understand social life, moral values, and human relationships.

Table 3. Conceptual metaphors identified in Sasak proverbs

Environmental Source Domain	Target Domain
Water	Social harmony
Wind	Causality
Tree	Identity and ancestry
Sea	Human emotions
Flowing water	Life processes

As demonstrated in Table 3, Sasak environmental metaphors are characterised by systematic mappings between environmental source domains and abstract target domains. These mappings illustrate how ecological experiences influence cultural conceptualisations within the Sasak worldview. Natural entities such as water, wind, trees, and the sea are not merely physical phenomena but also cognitive resources for understanding social relationships, emotional states, ancestral identity, and the dynamic processes of human life. This evidence supports the view that environmental knowledge is deeply embedded in linguistic expressions and cultural cognition.

One significant example appears in the proverb, "*Aiq meneng, tunjung tilah, empaq bau,*" which literally refers to calm water, blooming lotus flowers, and fish being caught. Semantically, however, the proverb conceptualises conflict resolution as a harmonious ecological balance, where all elements coexist without disruption. This metaphor can thus be represented as follows: Social harmony is ecological balance. The proverb suggests that social problems should be resolved peacefully so that all parties benefit simultaneously, reflecting a cultural preference for consensus, social cohesion, and collective well-being.

DOI: 10.30812/humanitatis.v12i2.6485

ISSN (Print) : 2338-9362
ISSN (Online) : 2477-2267

Another example is the proverb, "*Ndaq araq angin ndeq gumi bergerak,*" which conceptualises causality through natural processes, literally meaning 'there is no wind without the earth moving'—where causes are natural forces. This expression reflects the belief that every event has an underlying reason. It thereby reinforces a culturally grounded understanding of accountability and rational explanation.

A third example appears in the proverb, "*Kayuq Tinggi Tetap Berpijak Lek Tanaq,*" which uses the relationship between a tree and soil to represent social identity. Regardless of social status or achievement, individuals remain connected to their origins, family, and community. This demonstrates how environmental knowledge can provide a cognitive framework for understanding social values.

3.3. Cultural cognitive models in Sasak environmental semantics

Further analysis identified three major cultural cognitive models embedded within the semantic structure of environmental discourse. The first model is *Nature as a Source of Social Order*. In this model, environmental elements are often used to explain social behaviour and community relationships, where natural balance functions as a model for social harmony. This indicates that ecological observations directly influence cultural understandings of human interaction.

The second model is *Water as a symbol of collective well-being*. Water-related terminology and metaphors occupy a central position in the Sasak conceptual system, symbolising life, continuity, purity, and cooperation. This cognitive model likely reflects the historical importance of irrigation systems (known locally as *subaq*) and agricultural activities in Sasak society.

The third model is *Mountains as Sacred Ecological Spaces*. In the Dewi Anjani and Mount Rinjani narrative, mountains are not merely physical landscapes but sacred entities associated with spiritual power and environmental stewardship. This cognitive model reflects an integrated worldview in which ecological and spiritual dimensions are inseparable, reinforcing the idea that natural features carry profound cultural and moral significance.

3.4. Discussion

A. Environmental semantics and cultural cognition

The findings of this study provide substantial evidence for the central assumptions of cognitive semantics, namely that linguistic meaning emerges from the interaction between embodied experience, cognitive processes, and culturally situated knowledge systems. The semantic organisation of environmental concepts in the Sasak language shows that lexical meanings are not random representations of the outside world; instead, they are cognitive constructions shaped by generations of interaction between the Sasak community and Lombok Island's ecology (Ecklund, 1977). The identified semantic categories—including water resources, landscapes, flora, fauna, and environmental processes—reveal systematic patterns of conceptualisation that reflect culturally significant experiences and collective ecological knowledge.

From the perspective of cognitive semantics, meaning is grounded in human experience and conceptualisation rather than existing as an autonomous linguistic entity. Lakoff and Johnson (2008) argue that human cognition is fundamentally embodied, meaning that conceptual structures emerge from recurrent bodily and environmental interactions, with language functioning as a symbolic manifestation of these conceptual systems. The environmental lexicon identified in the Sasak language strongly supports this proposition, as the extensive vocabulary associated with water, landforms, agricultural landscapes, and natural phenomena indicates that these elements occupy a central position in the experiential world of Sasak speakers. Consequently, the linguistic prominence of such concepts reflects the cognitive significance of environmental knowledge within the community.

Of the semantic domains identified, those related to water constitute the most salient category. Lexical items such as *aiq* (water), *aik mancur* (spring water), *aiq muteq* (clear water), *koko'* (river), *danau* (lake), and *segare* (sea) demonstrate a high degree of semantic differentiation within the hydrological domain. This is a particularly significant finding because cognitive semantics predicts that concepts associated with frequent and culturally important experiences tend to develop greater lexical elaboration. The existence of multiple terms referring to distinct water-related phenomena suggests that water is perceived not merely as a physical resource but

ISSN (Print) : 2338-9362
ISSN (Online) : 2477-2267

as a culturally meaningful entity embedded within social, economic, and spiritual life.

The ecological conditions of Lombok provide an important explanation for this semantic richness. Historically, Sasak society has relied heavily on agriculture, irrigation systems (known locally as *subaq*), and water management practices for subsistence and community development. Repeated interactions with water resources have generated detailed ecological knowledge that has become entrenched in the mind and expressed in language, reflecting what Lakoff and Johnson (2008) describe as experiential realism: conceptual structures arising from direct engagement with environmental realities. Consequently, water is not merely conceptualised as a material substance but as an organising principle of social and ecological life.

The findings also suggest that environmental concepts in the Sasak language carry symbolic significance and are used to express cultural values, social norms, and collective identities. This observation closely aligns with contemporary developments in cognitive linguistics (Glebkin, 2025; Whittle et al., 2023), which emphasise that linguistic meaning emerges from the dynamic interaction between conceptual knowledge, contextual interpretation, and cultural experience. Evans argues that lexical items activate broader conceptual networks rather than isolated dictionary definitions; accordingly, environmental terms in the Sasak language evoke complex systems of cultural knowledge that extend far beyond their denotational functions.

The semantic and metaphorical functions of water-related expressions clearly illustrate this phenomenon. In the proverb *Aiq meneng, tunjung tilah, empaq bau*, for example, water functions as more than a reference to a natural element; it activates a conceptual network associated with balance, harmony, cooperation, and collective well-being. The calmness of water serves as a model for ideal social relationships, while the coexistence of lotus flowers and fish symbolises mutually beneficial outcomes. Such meanings cannot be fully understood through lexical analysis alone, as they emerge from culturally shared conceptual structures, requiring access to encyclopaedic knowledge that speakers associate with particular concepts (Aceves & Evans, 2024). In the Sasak context, environmental concepts act as cognitive gateways through which broader cultural meanings are communicated and perpetuated.

The symbolic role of environmental concepts is particularly evident in expressions involving landscapes and natural features. Terms such as *gunung* (mountain), *Rinjani* (Mount Rinjani), *tanaq* (land), and *kayuq* (tree) often serve as cultural symbols representing identity, ancestry, stability, and spiritual continuity. The proverb *Kayuq tinggi tetap berpijak lek tanaq* demonstrates how ecological observations can be transformed into moral and social principles, where the relationship between a tree and the soil from which it grows is used to understand human relationships with family, community, and cultural origins. Such semantic constructions illustrate how environmental knowledge contributes to the formation of culturally grounded cognitive models.

Sharifian's Cultural Linguistics framework (Sharifian, 2017) can be used to further explain the relationship between environmental semantics and cultural cognition. According to this framework, language embodies cultural conceptualisations that are collectively developed and transmitted within speech communities, including cultural schemas, categories, and metaphors that shape how members interpret reality. Unlike individual cognitive structures, cultural conceptualisations emerge through shared experiences and social interaction over extended historical periods.

From this standpoint, the environmental vocabulary of the Sasak language can be regarded as a repository of cultural cognition accumulated through generations of ecological adaptation. The terms denoting water, mountains, forests, and agricultural landscapes are not merely descriptive of environmental entities but encode culturally shared understandings regarding the proper relationship between humans and nature. The semantic patterns identified in this study reveal a cultural schema emphasising harmony, interdependence, sustainability, and environmental responsibility, values that are repeatedly reinforced through proverbs, folklore, customary expressions, and everyday communication practices.

The narrative of Dewi Anjani and Mount Rinjani provides a particularly illuminating example of cultural conceptualisation. In this narrative tradition, Mount Rinjani is not conceptualised solely as a geographical formation but as a sacred ecological space inhabited by spiritual forces responsible for maintaining environmental balance. This conceptualisation reflects a cultural schema in which nature is endowed with agency, moral significance, and

spiritual value. From the perspective of Cultural Linguistics, such representations illustrate how environmental meanings become integrated into broader systems of cultural knowledge and collective identity.

Furthermore, the findings indicate that environmental semantics serves as a pivotal mechanism for the intergenerational transmission of indigenous ecological knowledge. Through the utilisation of environmental vocabulary, proverbs, and narratives, younger generations acquire culturally sanctioned ways of understanding natural phenomena and human-environment relationships. Linguistic expressions thus fulfil not only communicative functions but also educational and epistemological functions, playing a vital role in the preservation of ecological knowledge, the reinforcement of cultural values, and the maintenance of continuity between past and present generations.

These findings contribute to broader discussions concerning the relationship between language, cognition, and environmental sustainability. Recent scholarship has increasingly recognised indigenous languages as valuable sources of ecological knowledge and environmental stewardship practices, and the Sasak data lend support to this perspective by demonstrating that linguistic meanings frequently encode sophisticated understandings of environmental processes and human ecological responsibilities. The conceptual organisation of environmental concepts is indicative of a worldview in which humans are positioned as integral components of ecological systems rather than external controllers of nature.

Theoretically, the study extends cognitive semantics by providing empirical evidence from an underrepresented Austronesian language. Although a substantial body of semantic theory has been developed from European languages, the Sasak data demonstrate that culturally specific environmental experiences play a significant role in shaping conceptual structures. The findings thus lend support to calls for greater cross-cultural diversity in semantic research and contribute to the development of a more inclusive understanding of human cognition.

The analysis demonstrates that environmental semantics in the Sasak language constitutes a complex interaction between embodied ecological experience, cultural conceptualisation, and cognitive representation. This standpoint is consistent with Lakoff and Johnson (1980), who proposed that conceptual structures emerge from recurrent interactions with the environment, and with Kozlowski et al. (2019), who argued that linguistic meanings activate rich conceptual networks grounded in cultural knowledge. In accordance with Sharifian (2017), these meanings collectively embody shared cultural conceptualisations that shape how community members understand nature, society, and their place within the world. The environmental lexicon of the Sasak language is therefore not merely a descriptive system but also a cognitive and cultural archive through which ecological knowledge, social values, and collective identity are preserved and transmitted across generations.

B. Conceptual metaphors as repositories of indigenous ecological knowledge

A seminal finding of this study is the pivotal function of conceptual metaphors in the preservation and transmission of indigenous ecological knowledge within the *Sasak* speech community. The identified metaphors demonstrate that environmental elements are not merely objects of physical observation, but rather function as cognitive resources through which abstract social, moral, and cultural concepts are understood and communicated. This finding provides substantial support for Lakoff & Johnson's (2008) argument that metaphor constitutes a fundamental mechanism of human thought, rather than being merely a rhetorical or stylistic device. From this standpoint, metaphor can be seen to extend beyond the domain of literary language. Instead, it structures *quotidian* reasoning, shapes perception, and influences how individuals conceptualize reality.

The *Sasak* data demonstrate that environmental concepts function as foundational domains for the conceptualisation of abstract target domains, including social harmony, causality, morality, identity, leadership, and collective responsibility. This pattern suggests that environmental experience occupies a central position within the cognitive system of *Sasak* speakers. The ecological environment provides material resources for survival, but it also provides other benefits (Jochim, 2013). Furthermore, it is important to note that the concept of social life is interpreted and organised through the medium of conceptual frameworks. Consequently, environmental metaphors function as cognitive bridges connecting observable natural phenomena with complex cultural meanings.

ISSN (Print) : 2338-9362
ISSN (Online) : 2477-2267

A notable illustration of this phenomenon can be observed in the proverb "*Aiq meneng, tunjung tilah, empaq bau*". At the fundamental level, the proverb delineates a harmonious ecological situation in which tranquil waters permit lotus flowers to flourish while fish remain plentiful. Nevertheless, its cultural interpretation extends far beyond environmental observation. The proverb under scrutiny conceptualises successful conflict resolution as a condition of ecological equilibrium, wherein multiple elements coexist without causing disruption to one another. The expression can be represented as follows, when viewed through the lens of Conceptual Metaphor Theory:

The concept of social harmony can be considered to be synonymous with ecological balance (Magdoff, 2012). This metaphor demonstrates how ecological experiences become cognitive models for understanding social relationships. The observation that water, plants, and animals can coexist within a balanced ecosystem is projected onto the social domain, where individuals are encouraged to resolve disputes peacefully and pursue mutually beneficial outcomes. The metaphor, as such, is a medium through which environmental knowledge and social philosophy are encoded (Kravchenko, 2016). The metaphor emphasises consensus, cooperation and collective well-being.

The significance of this metaphor extends beyond its communicative function. The proverb's contribution to the intergenerational transmission of environmental awareness is evidenced by its repeated invocation of ecological imagery in discussions of social conduct. Community members are instructed in the value of balance in human relationships through reference to environmental balance (Axelrod, 1994). Consequently, ecological knowledge becomes inextricably linked to moral education. This process demonstrates the function of metaphor as a mechanism for maintaining environmental understanding within the context of everyday discourse.

A comparable pattern is evident in the proverb *Ndaq araq angin gumi ndeq lampaq* ("There is no wind without the earth moving"). At a literal level, the expression refers to a causal relationship observed in natural phenomena. At the conceptual level, however, it provides a framework for understanding social events and human behaviour. The metaphor can be represented as follows: *CAUSES AND NATURAL FORCES*.

The proverb reflects the belief that every event has an underlying cause, just as environmental changes are produced by identifiable natural processes. This metaphor illustrates how ecological observation contributes to cultural reasoning and social judgement. The understanding of environmental causality functions as a model for interpreting human actions, thereby reinforcing values of responsibility, accountability, and rational explanation. Such examples illustrate that indigenous ecological knowledge is not preserved solely through technical descriptions of nature, but also through metaphorical structures that shape collective patterns of thought.

Another significant metaphor is illustrated by the proverb *Kayuq Tinggi Tetap Berpijak Lek Tanaq* ("A tall tree remains rooted in the soil"). The proverb employs the relationship between a tree and its roots in order to conceptualise human identity and social belonging. In terms of conceptual metaphor, the expression can be represented as follows:

The concept of human identity can be likened to that of a rooted tree, in the sense that it is indicative of the importance of maintaining connections with one's origins, community and cultural heritage, regardless of social status or personal achievement (Jones & Cloke, 2002). The ecological relationship between trees and soil serves as a source domain through which social identity is understood. The metaphor also reflects indigenous ecological knowledge concerning the dependence of living organisms on their environmental foundations. The integration of ecological observations within the context of moral instruction has been demonstrated to facilitate a dual transmission of environmental understanding and cultural values.

The findings demonstrate that environmental metaphors in *Sasak* discourse perform epistemological functions. These models offer culturally accessible frameworks for the organisation of knowledge and the interpretation of experience. In lieu of the transmission of ecological information through formal instruction, the community incorporates such knowledge into proverbs, oral traditions and everyday communication practices. This process enables ecological understanding to become deeply integrated into collective cognition and social behaviour.

From the perspective of Cultural Linguistics, these metaphorical structures can be understood as manifestations of cultural conceptualisations shared by members of the *Sasak* community. Sharifian (2017c) posits

that cultural conceptualisations emerge through repeated social interaction and collective experience, eventually becoming embedded within linguistic practices. Environmental metaphors represent a particular form of cultural conceptualization, as they embody culturally specific understandings of nature and human-environment relationships. The repeated use of environmental imagery in *Sasak* discourse indicates that ecological experiences have become central components of the community's shared cognitive system.

It is important to note that the findings demonstrate that environmental metaphors function as repositories of indigenous ecological knowledge. The notion of a repository entails more than mere storage. The term refers to a dynamic mechanism through which knowledge is preserved, interpreted, and transmitted across generations. Environmental metaphors fulfil this function with great precision. It is evident that observations pertaining to ecological balance, natural causality, environmental interdependence, and sustainable relationships with nature are preserved. Concurrently, they perpetually rejuvenate the relevance of such knowledge by assimilating it into contemporary social interactions.

The role of metaphor as a repository of ecological knowledge has also been documented in other indigenous and *Austronesian* communities. A close examination of *Māori* linguistic traditions has revealed that natural elements such as rivers, forests, mountains, and oceans are often employed as metaphorical foundations for the expression of concepts related to kinship, spirituality, and environmental responsibility. *Māori* cosmological narratives frequently conceptualize humans and natural entities as interconnected members of a shared genealogical system. As is evident in the field of Balinese cultural discourse, analogous patterns have been identified, wherein environmental metaphors are closely linked to the philosophical principles of harmony, balance, and reciprocal relationships between humans, nature, and spiritual forces.

The convergence between *Sasak*, *Māori*, and Balinese traditions suggests the existence of broader *Austronesian* tendencies in environmental conceptualization. Despite the fact that each community possesses distinct cultural histories and ecological contexts, environmental metaphors have been shown to function as mechanisms for integrating ecological knowledge into social and moral systems (Akera, 2007; Raymond et al., 2013; Trickett, 1984). This pattern suggests that environmental cognition occupies a central position within the cultural worldviews of *Austronesian* societies. In contrast to the conventional passive conception of nature as an external force, these communities conceptualize the environment as an active participant in social and cultural life.

Moreover, the findings call into question contemporary assumptions concerning the primary means of transmission of ecological knowledge, namely scientific and institutional channels. In the *Sasak* context, environmental knowledge is embedded within linguistic and cultural practices that operate at the level of everyday communication. Proverbs, narratives and customary expressions function as educational instruments, thereby facilitating the maintenance and reproduction of ecological understanding. Consequently, language emerges as a pivotal domain for the conservation of environmental knowledge.

This observation carries significant ramifications for initiatives focused on the maintenance of language and the preservation of culture. The decline of indigenous languages may result not only in linguistic loss but also in the disappearance of culturally specific ecological knowledge accumulated over centuries. Environmental metaphors represent a valuable intellectual resource, offering insights into sustainable resource management, environmental ethics, and human-nature relationships. Preserving these linguistic structures is therefore a key component in broader efforts to safeguard cultural heritage and promote ecological sustainability.

From a theoretical perspective, the findings contribute to Conceptual Metaphor Theory by demonstrating the importance of ecological experience as a source domain for conceptualization in indigenous linguistic contexts. A substantial proportion of research in the field of metaphor has been dedicated to the identification of universal conceptual patterns derived from bodily experience. The *Sasak* data indicate that local ecological conditions also play a crucial role in shaping metaphorical systems. It is evident that environmental metaphors are characterised by a simultaneous embodiment of cultural situatedness and ecological groundedness.

The analysis demonstrates that conceptual metaphors in the *Sasak* language function as sophisticated cognitive mechanisms through which indigenous ecological knowledge is preserved, transmitted, and continually

reinterpreted. Through metaphorical mappings between environmental and social domains, ecological observations become integrated into cultural values, moral principles, and collective identities. It is evident that environmental metaphors function not solely as linguistic expressions but also as enduring repositories of cultural memory, ecological wisdom, and indigenous knowledge systems. These systems are instrumental in maintaining the intellectual and cultural continuity of the *Sasak* community.

C. Indigenous environmental knowledge and Sasak cultural identity

The findings demonstrate that environmental semantics constitute a fundamental component of cultural identity construction within the Sasak speech community. The environmental lexicon, proverbs, customary expressions, and folklore narratives have been shown to contain semantic representations which reveal that ecological knowledge is deeply embedded within the cultural cognition of Sasak society (Hubbi, 2024). The application of environmental concepts extends beyond the mere description of physical surroundings. Instead, they function as symbolic resources through which collective values, social norms, historical memory, and cultural identity are produced, maintained, and transmitted across generations.

This finding lends further support to the expanding corpus of scholarship that posits that indigenous languages function as repositories of cultural knowledge and collective identity (Ajani et al., 2024). Indigenous communities characteristically evolve culturally specific systems of environmental understanding through long-term interactions with local ecosystems. These understandings become encoded within linguistic structures, resulting in semantic systems that simultaneously represent ecological knowledge and cultural worldviews. In the case of the Sasak language, concepts associated with water, mountains, forests, agricultural landscapes, and natural processes reflect not only environmental realities but also culturally shared interpretations concerning the relationship between humans and nature.

The correlation between environmental semantics and cultural identity is evident in the prevalence of landscape-related concepts, including Rinjani, *gunung* (mountain), *tanaq* (land), *pasih* (beach), and *reban* (forest). These environmental entities occupy a central position within the cultural discourse of the Sasak people because they represent more than geographical features. These cultural symbols serve as repositories of historical experience, spiritual beliefs, collective memory, and social values (Kleinhempel & Nicolaides, 2024; Kubal & Becerra, 2014). The recurrent presence of these concepts within oral traditions, folklore narratives, and customary expressions indicates that environmental knowledge plays a pivotal role in shaping the Sasak people's conception of themselves and their position within the world.

Mount Rinjani occupies a particularly significant position within the Sasak cultural imagination, being regarded as a sacred mountain and a symbol of cultural identity. The narrative of Dewi Anjani and Mount Rinjani serves to illustrate how environmental features acquire cultural meaning through processes of symbolic interpretation and narrative transmission. Within the context of the folklore tradition, Mount Rinjani is not conceptualised in a simplistic manner as a mere physical mountain or geological formation. Instead, it is represented as a sacred space associated with spiritual authority, ecological balance, and cultural continuity. Dewi Anjani is depicted as a guardian figure charged with the responsibility of safeguarding the natural order and fostering harmony between humans and the environment.

From the perspective of Cultural Linguistics, such narratives can be interpreted as manifestations of cultural conceptualisations that shape collective understandings of nature. Sharifian (2003) posits that cultural conceptualisations emerge through shared social experiences and become embedded within language, discourse, and cultural practices. The Dewi Anjani narrative is indicative of a cultural schema in which mountains are regarded as living entities that possess spiritual significance and ecological agency. This conceptualisation differs substantially from modern utilitarian perspectives that regard mountains primarily as natural resources or tourism assets. Conversely, the narrative positions nature as a respected partner in human existence, thereby reinforcing environmental responsibility and ecological stewardship.

The symbolic significance of Mount Rinjani also plays a role in the formation of collective identity.

The formation of cultural identity is not solely determined by social institutions, political structures, or ethnic affiliations; it is also influenced by the manner in which communities interact with specific landscapes and ecological environments. In numerous indigenous societies, geographical features are employed as markers of collective belonging, given their capacity to embody shared histories, cultural memories, and spiritual values. The persistent presence of Mount Rinjani in Sasak discourse exemplifies the role of environmental features as anchors of cultural identity and communal continuity.

The relationship between environmental knowledge and cultural identity is further reflected in Sasak proverbs and customary expressions. The proverb "*Kayuq Tinggi Tetap Berjak Lek Tanaq*" (literally translated as "The higher the tree, the deeper the roots") offers an illustration of the manner in which environmental observations become integrated into moral and social reasoning. The ecological relationship between a tree and the soil in which it grows is employed as a metaphorical framework for understanding human identity and social belonging. This expression underscores the notion that individuals must maintain a connection to their origins, irrespective of their social accomplishments or personal achievements. The metaphor communicates two interconnected concepts. Firstly, it conveys ecological knowledge concerning the dependence of living organisms on environmental foundations. Secondly, it conveys social values concerning loyalty, humility, and cultural continuity.

In a similar manner, the proverb *Aiq meneng, tunjung tilah, empaq bau* is indicative of a cultural paradigm in which environmental harmony is regarded as an archetypal model for social harmony. The balanced coexistence of water, plants, and aquatic life can be conceptualised as a model for ideal community relationships. This pattern suggests that environmental knowledge functions not only as practical information but also as a source of ethical principles guiding social behaviour. Through repeated use in everyday communication, such expressions contribute to the maintenance of shared cultural values and collective identity.

The findings further indicate that indigenous environmental knowledge in Sasak society is closely associated with agricultural practices and traditional resource management systems. The semantic richness surrounding water-related concepts, such as *aiq*, *aik mancur*, and *aiq puteq*, reflects the historical importance of water in sustaining agricultural production and community livelihoods. Water is not merely perceived as a physical resource, but as a cultural asset essential for collective survival and social stability. Consequently, environmental knowledge concerning water management becomes integrated into broader systems of cultural understanding and communal responsibility.

This relationship between environmental knowledge and identity aligns with recent scholarship on indigenous ecological knowledge systems. It has been posited by researchers that ecological knowledge is frequently inextricable from cultural values, social institutions, and linguistic practices. It is important to note that environmental knowledge does not exist independently as a collection of technical facts. Instead, it is part of a wider cultural framework through which communities interpret and engage with the natural world. The Sasak data provide substantial support for this perspective, demonstrating that environmental concepts consistently function as carriers of cultural meaning and social identity.

A significant implication of these findings pertains to the role of language in the preservation of cultural resilience. In contemporary contexts characterised by globalisation, urbanisation, and increasing linguistic shift towards national and international languages, indigenous knowledge systems face significant challenges. It is therefore vital to ensure that younger generations are not losing touch with traditional ecological concepts, customary expressions, and oral narratives. These have historically functioned as mechanisms for transmitting environmental knowledge. It can thus be posited that the gradual decline in the use of indigenous languages may result in the gradual erosion of culturally embedded ecological knowledge.

The Sasak case demonstrates that language loss encompasses more than the disappearance of lexical items or grammatical structures. Moreover, it encompasses the prospective loss of cultural conceptualisations, environmental ethics, and collective memories accumulated over generations. It is evident that environmental semantics represents a significant domain for language preservation efforts, given its capacity to encapsulate the nexus of linguistic diversity, cultural identity, and ecological knowledge. The documentation and analysis of these semantic structures

is of considerable benefit to both linguistic scholarship and broader initiatives aimed at safeguarding cultural heritage and promoting sustainable relationships between communities and their environments.

Moreover, the findings call into question the prevailing Western dichotomies that delineate culture and nature. The semantic patterns observed in Sasak discourse suggest a deep interconnectedness between the environmental and cultural domains. The employment of natural elements as sources of cultural meaning is a consistent phenomenon, whilst the expression of cultural values through ecological concepts is a frequent occurrence. This interconnectedness is indicative of a relational worldview, which posits that humans are understood as integral components of larger ecological systems. These perspectives provide valuable insights for contemporary discussions concerning environmental sustainability, climate adaptation, and ecological ethics.

From a theoretical standpoint, the study makes a contribution to the field of Indigenous Knowledge Studies by demonstrating how environmental knowledge becomes institutionalised through linguistic and cultural practices. Furthermore, it contributes to the development of Cultural Linguistics by offering empirical evidence that cultural identity is, at least in part, constructed through environmental conceptualisations embedded within language. The findings suggest that environmental semantics functions as a crucial interface linking ecological experience, cultural cognition, and collective identity formation.

The analysis indicates that indigenous environmental knowledge and Sasak cultural identity are mutually constitutive phenomena. Environmental concepts function as cultural symbols, moral frameworks, and repositories of collective memory, thereby facilitating the transmission of values, beliefs, and ecological understanding across generations. The reproduction of cultural identity and the preservation of indigenous ecological knowledge are both facilitated by environmental semantics, which does so through narratives, proverbs, and everyday discourse. The Sasak language thus functions not only as a medium of communication but also as a cultural archive through which relationships among people, place, and environment are continuously negotiated and maintained.

The findings of this study lend support to the hypothesis that indigenous languages function as repositories of ecological knowledge, cultural cognition, and collective identity, as demonstrated in previous research. The results of this study align with the findings of Hubbi (2024), Lakoff and Johnson (2008), Mazzocchi (2020), Sharifian (2017), Syamsurrijal et al. (2023), and Thompson et al. (2020), which demonstrate that environmental knowledge is systematically encoded in linguistic structures and conceptual metaphors that reflect culturally shared understandings of human–environment relationships. In a manner consistent with the findings of other indigenous communities, environmental phenomena in the Sasak language function as source domains for interpreting social, cultural, and moral concepts. However, this study extends previous research by providing empirical evidence from the Sasak language and demonstrating that environmental concepts are organised into semantic domains and metaphorical structures that function not only as cognitive frameworks but also as repositories of indigenous ecological knowledge. Furthermore, by integrating Cognitive Semantics, Conceptual Metaphor Theory, and Cultural Linguistics, this study offers a more comprehensive explanation of how environmental semantics contributes to the preservation of ecological knowledge, the construction of cultural identity, and the transmission of cultural values across generations. These findings contribute novel insights into the interconnected relationship between language, cognition, culture, and indigenous environmental knowledge.

4. CONCLUSION

The present study demonstrates that environmental knowledge in the Sasak language is systematically represented through interconnected semantic domains and conceptual metaphors that reflect the community's ecological experience and cultural cognition. Environmental elements such as water, forests, mountains, and landscapes function not only as lexical categories but also as cognitive and cultural resources for understanding social values, identity, harmony, and human behaviour. The findings confirm the close intertwining of language, ecological knowledge and cultural conceptualisation, thereby supporting the perspectives of Cognitive Semantics, Conceptual Metaphor Theory and Cultural Linguistics.

It is recommended that future research endeavours extend the scope of analysis by incorporating larger datasets, additional Sasak dialects, and comparative studies with other indigenous languages. Further studies may also explore the role of environmental semantics in language preservation, digital documentation, and ecological education. This would facilitate a more comprehensive understanding of how indigenous knowledge systems contribute to cultural sustainability and environmental awareness.

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ISSN (Print) : 2338-9362
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