



Exploration of Ethnomathematics in the Kabihu Kinship System from the Perspective of Set Theory and Relations

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ABSTRACT

This study was motivated by the importance of linking mathematics learning to local cultural contexts so that mathematical concepts become more meaningful. The kabihu kinship system in Sumba society has a social structure that can potentially be interpreted through mathematical concepts, particularly sets and relations. This study aims to explore the structure of the Praikaraha kabihu in Raja Prailiu Village, East Sumba, and to identify the forms of sets and types of relations that can be interpreted mathematically. The study employs a qualitative approach using ethnography. Three informants were selected through purposive sampling based on the following criteria: understanding the history and structure of the kabihu, being involved in traditional life, and being able to provide information regarding kinship relationships within the kabihu. Data were collected through semi-structured interviews, non-participant observation, and documentation. Data analysis was conducted through the stages of ethnographic analysis, which include the identification of cultural domains, the grouping of categories, and the interpretation of cultural meanings, and was supported by Miles and Huberman's interactive model through data condensation, data presentation, and the drawing and verification of conclusions. Data validity was examined through source triangulation, methodological triangulation, and member checking. The research results indicate that members of the Kabihu Praikaraha can be understood as a set consisting of individuals based on lineage and Kabihu membership. Relationships were found in kinship and marital ties, including those between the Kabihu and related groups such as the Anakawini and Angupaluhu. These findings indicate the existence of a cultural structure that can be interpreted through the concepts of sets and relations. Thus, the Kabihu system has the potential to be used as a context or resource for ethnomathematics-based mathematics learning, particularly in the areas of sets and relations.



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Introduction

Mathematics is not only understood through symbols, formulas, and formal procedures, but can also be studied through social and cultural activities that develop within a community. Social and cultural contexts can be part of the mathematics learning experience because they provide situations that are relevant to students' lives (Hendarman et al., 2026). However, the use of cultural contexts in mathematics must be based on an adequate understanding of the cultural practices themselves. This approach is important so that culture is not merely used as an illustration in learning but is understood based on the meanings, rules, terminology, and perspectives of the community that practices it. Ethnomathematics is a field of study that examines ideas, activities, practices, and knowledge related to mathematics within a specific cultural context (Hasbi & Fitri, 2026). In ethnomathematics research, mathematical concepts are not necessarily assumed to be used consciously by a community. Researchers must first understand a practice from the community's perspective and then identify structures or patterns that can be interpreted using mathematical concepts (Fiquiyah et al., 2026). Thus, there is a distinction between the cultural meanings assigned by the community and the mathematical interpretations made by researchers. This distinction is important because a cultural practice may have broader social, historical, and symbolic functions than the mathematical representations that can be identified within it.

One element of Sumba culture that features a complex social and kinship structure is the kabihu. In Sumba society, the kabihu is linked to group identity, ancestral origins, genealogical relationships, marital ties, social status, and the rules governing relationships between individuals and groups. Therefore, the kabihu cannot be understood merely as a grouping of individuals based on lineage. Membership and relationships within the kabihu are also tied to how the community understands origins, status, obligations, and intergroup relationships in social life. This structure makes the kabihu relevant for study as a cultural phenomenon before any potential connection to mathematical concepts is interpreted (Maghfiroh et al., 2026). From an ethnomathematics perspective, the structure of kabihu can be explored to identify patterns that can be mathematically interpreted as forms of grouping and relationships (Loviana et al., 2026). However, this study does not assume from the outset that kabihu constitutes a set or that kinship relationships are mathematical relations. The researchers first identified the cultural elements conveyed by the community, including forms of membership, local terms, kinship rules, the meanings of relationships, and patterns of intergroup relationships. Once these cultural structures were understood, the researchers conducted a mathematical interpretation to examine their potential connection to the concepts of sets and relations. The analysis of relations focused on the characteristics of the identified relationships, such as one-to-one, one-to-many, symmetric, transitive, and the possibility of equivalence relations if the data characteristics met the relevant mathematical definitions. In this way, the mathematical interpretation does not replace the cultural meaning of kabihu but is used as an analytical perspective on the identified structure.

Previous ethnomathematics studies have been conducted on various cultural objects, Hendriawati et al.,(2026) for example, examined local cultural practices and elements to identify the mathematical concepts contained within them. These studies demonstrate that cultural activities and artifacts can serve as sources for discovering mathematical ideas, but their focus is primarily directed toward cultural forms or practices that exhibit mathematical characteristics. Another study by Ayumni et al., (2025) examines everyday life contexts in relation to mathematical relational concepts. The results of this study indicate that relationships between elements in daily life can be used to construct an understanding of relations. However,

the contexts examined have not specifically positioned kinship systems as sociocultural structures that need to be understood first from a community perspective. Research on Sumba culture has also demonstrated the potential of local cultural elements to be examined through a mathematical [Asih et al., \(2025\)](#); however, studies specifically on the kabihu system—particularly those distinguishing between cultural descriptions and interpretations of set and relation concepts—remain limited.

These limitations indicate a research gap in ethnomathematics studies of kinship systems. Previous research has shown that cultural elements can be examined to identify mathematical concepts, but few studies have specifically explored the kinship structures of Sumba society while preserving the complexity of cultural meanings and then systematically mapping them mathematically. This study is also not intended to prove that kabihu is directly a set concept or that all kinship relationships satisfy specific relational properties. Rather, this study seeks to first identify the cultural structure and then determine the form of mathematical interpretation based on the characteristics of the data found. This approach distinguishes this study from previous research, which has focused more on artifacts, patterns, or cultural activities as objects for identifying mathematical concepts.

The village of Raja Prailiu in East Sumba was selected as the research site because the local community still possesses knowledge of the kabihu kinship system, which can be traced through traditional leaders and community members who understand the history, structure, terminology, and kinship relationships within the community. The research focuses on the Kabihu Praikaraha system so that the exploration can be conducted more specifically and in greater depth within a single kinship context. This focus allows the researcher to obtain information on how the community understands membership, genealogical relationships, marital relationships, and intergroup relationships before interpreting them using mathematical concepts. Based on this description, this study aims to: (1) identify the cultural elements present in the Kabihu Praikaraha kinship system among the community of Kampung Raja Prailiu; (2) analyze the structure or form of grouping found and its possible interpretation through set theory; and (3) identify and analyze the patterns of relationships found based on the characteristics of mathematical relational concepts. The research results are expected to provide an overview of the mathematical structures that can be interpreted from the Kabihu kinship system and serve as a basis for considering Kabihu as a context or source for ethnomathematics-based mathematics learning. This study does not examine the effectiveness of using Kabihu in learning or in improving students' understanding of mathematics.

Method

Research Method

This study employs a qualitative approach with an ethnographic design. This design was chosen to understand the kabihu kinship system from the perspective of the community that practices it and to identify relevant cultural elements that can be interpreted mathematically ([Novianti et al., 2025](#)). The research was conducted in Kampung Raja Prailiu, East Sumba, through two field visits, on March 13 and 27, 2026. The limited duration of the fieldwork was one of the study's constraints; therefore, the research was not intended to comprehensively describe the full complexity of Kabihu culture. Data collection was carried out through semi-structured interviews, non-participatory observation, and documentation, involving traditional leaders and community members knowledgeable about the kabihu system. Semi-structured

interviews were used to allow informants to explain practices, terms, rules, and the meanings of kinship relationships based on their experiences and understanding. Observation and documentation were used to supplement and confirm the information obtained from the interviews. The research was carried out through the stages of preparation, data collection, analysis, and interpretation. The data obtained were first analyzed to identify cultural elements and meanings within the kabihu system (Hendarman et al., 2026). Subsequently, the cultural elements that had been understood were interpreted from an ethnomathematics perspective to identify their connection to the concepts of sets and relations.

Population and Subjects

This study was conducted in Kampung Raja Prailiu, East Sumba, focusing on the Kabihu Praikaraha kinship system. The research informants consisted of three individuals selected purposefully based on their status, knowledge, and experience in understanding the local community's kinship system. The first informant, S.P.M.H., is 63 years old and a traditional leader with knowledge of the history, structure, membership, and rules of the kinship system. The second informant, U.R., is 46 years old and a community member with experience and knowledge regarding social life and the kinship system within the local community. The third informant, N.A., is 69 years old and a member of the Kabihu Tunggutari who possesses knowledge of the kinship system and the community's social life. All three informants provided information based on their respective positions, experiences, and knowledge regarding the kinship system that has developed in Kampung Raja Prailiu.

Research Instruments

The research instruments included an interview guide, an observation sheet, and documentation. The interview guide was used to gather information on the history, membership, local terms, kinship relationships, marriage rules, social status, symbols, and the meaning of the kabihu based on the informants' knowledge and experience. Observation sheets were used to record environmental conditions and the state of the research site during field visits. Documentation served as supporting data in the form of interview recordings, site photographs, and field notes. Information regarding the kinship system and cultural meanings was obtained through interviews with informants, while observations and documentation were used to supplement the research data. The data obtained were then analyzed to understand the cultural elements and meanings within the kinship system before being interpreted from an ethnomathematics perspective (Gusti et al., 2024). The interview guidelines are presented in Table 1.

Table 1. Interview guidelines

No.	Interview Questions	Purpose
1.	What does "kabihu" mean according to the people of Sumba?	To understand the definition and meaning of "kabihu" as understood by the community.
2.	What do you know about the history and origins of "kabihu"?	To explore the history and origins of "kabihu."
3.	How is a person recognized as a member of a kabihu?	Understanding how the community recognizes kabihu membership.
4.	Who is included in a kabihu, and how does the community determine membership?	Identifying membership and the basis for grouping according to the community.

No.	Interview Questions	Purpose
5.	What are the local terms used to describe relationships or status within a kabihu?	Exploring local terms related to the kinship system.
6.	How are kinship relationships among members within a kabihu understood by the community?	Understanding the forms and meanings of kinship relationships within a kabihu.
7.	What are the relationships between one kabihu and another?	Understanding social and kinship relationships between kabihu.
8.	What are the relationships between parents, children, siblings, and other family members within the kabihu system?	What are the relationships between parents, children, siblings, and other family members within the kabihu system?
9.	What are the marriage rules related to the kabihu system?	Understanding the rules and significance of marriage within the kabihu system.
10.	How are marital relationships between kabihu communities understood by society?	Exploring the forms and meanings of marital relationships between kabihu.
11.	Are there any kinship or marital relationships that are prohibited? If so, what are the reasons?	Identifying relationship restrictions and the underlying cultural reasons.
12.	How does the community know or distinguish whether someone comes from a particular kabihu?	Understanding kabihu identity and markers of membership.
13.	Are there specific symbols, objects, terms, or signs associated with the kabihu? What do they mean?	Exploring the symbols, signs, terms, and cultural meanings associated with the kabihu.
14.	How do people describe or recount lineage within a kabihu?	Understanding how people explain lineage and family trees.
15.	What are the functions and meanings of the kabihu in community life?	Understanding the function, value, and significance of kabihu in community life.

Data Collection

Data collection was conducted using three techniques: semi-structured interviews, non-participant observation, and documentation. Interviews were conducted with informants who understand the kabihu system to obtain information regarding its history, membership structure, kinship rules, relationships between kabihu groups, and cultural significance. Non-participant observation was carried out by observing the environmental conditions and social situations at the research site during field visits. Since no traditional ceremonies were taking place during the visits, information regarding kinship practices and rules was obtained through interviews with informants. Meanwhile, documentation was carried out by collecting supporting data in the form of interview recordings, photographs of activities, and the researcher's field notes to reinforce and supplement the data from interviews and observations, given the limitations of written records due to the absence of a written culture in the past. These three techniques were conducted simultaneously so that the data obtained would complement one another, thereby facilitating a more in-depth and accurate data analysis process. The research procedure, which includes the stages of preparation, data collection, data analysis, mathematical interpretation, and research results, is presented in [Figure 1](#).

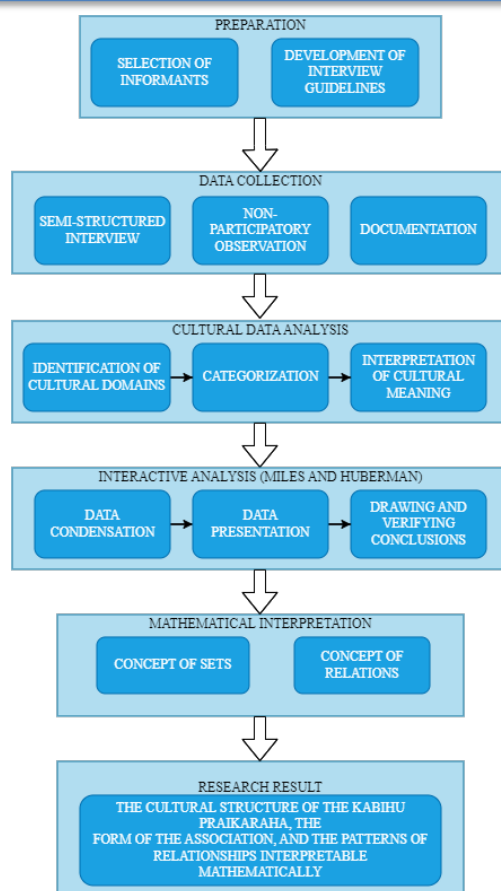


Figure 1. Research procedure for the exploration of ethnomathematics in the kabihu praikaraha system

Analysis

Data analysis in this study was conducted qualitatively using the interactive data analysis model by Matthew B. Miles and A. Michael Huberman, which includes data reduction, data presentation, and drawing conclusions/verification (Huberman & Miles, 1983). The analysis process began as soon as the data were collected through semi-structured interviews, non-participant observation, and documentation. During the data reduction stage, the researcher reviewed all the data, selected relevant information, and coded the data based on their cultural content. The data were then grouped into themes, such as the history and structure of the Kabihu, membership, kinship terms, kinship relationships, marriage rules, and the meaning and function of the Kabihu. At this stage, the cultural data were understood based on the informants' accounts and perspectives without first assigning mathematical interpretations.

The data presentation stage involved organizing the results of the data grouping into descriptive narratives to illustrate the structure and patterns of the Kabihu Praikaraha kinship system. Subsequently, the researcher identified cultural elements or patterns related to mathematical concepts. The results of this identification are then mapped to the concepts of sets and relations based on relevant mathematical definitions and characteristics. Thus, mathematical interpretation is performed after the cultural structure and meaning have been understood from the research data (Prahmana et al., 2026).

The final stage involves drawing conclusions and verification. The researchers formulate conclusions based on the results of the cultural data analysis and the mathematical interpretations that have been conducted, then re-examine the consistency between the

interview data, observations, documentation, and the results of the interpretations. The processes of data reduction, data presentation, and drawing conclusions are carried out iteratively and are interrelated throughout the analysis process (Chen et al., 2025).

Research Findings

The results of this study were obtained through structured interviews, observations, and documentation conducted in Kampung Raja Prailiu, East Sumba. Research data were obtained from three informants: S.P.M.H. from Kabihu Praikaraha, U.R. from Kabihu Praikaraha, and N.A. from Kabihu Tunggutari. The data were then analyzed to examine the relationship between the Kabihu kinship system and mathematical concepts, particularly the concepts of sets and relations.

The Structure of the Kabihu System as a Representation of Sets

Based on the interview results, the community of Kampung Raja Prailiu recognizes the kabihu system as a kinship group based on lineage. Informant S.P.M.H. stated that:

"A person becomes a member of a kabihu based on paternal lineage, and membership is passed down from generation to generation." A similar point was made by N.A., who stated that "a kabihu is an extended family group descended from a single ancestor and generally follows the male line." In addition, U.R. explained that a kabihu "not only signifies family ties but also serves as a social identity for the people of Sumba, linked to praingu, marapu, and traditional status."

This study identified several kabihu in the village of Raja Prailiu, including Kabihu Praikaraha and Kabihu Tunggutari. Kabihu Praikaraha is the kabihu of the lineage according to informants S.P.M.H. and U.R., while Kabihu Tunggutari is the kabihu of informant N.A. Each kabihu has members who descend from a specific lineage and is governed by customary rules that bind all members of that kabihu. Based on the explanation of the kabihu kinship system, the lineage structure of Kabihu Praikaraha members can be illustrated through the following kinship tree diagram.

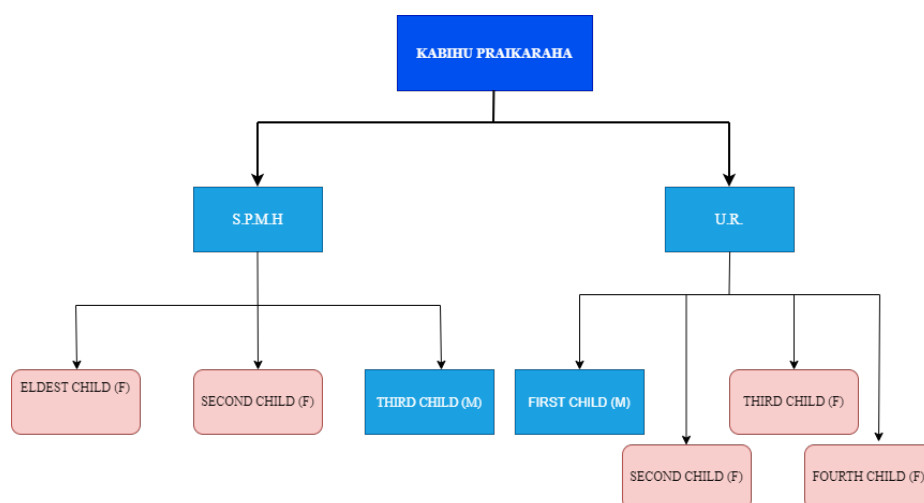


Figure 2. Kinship Structure of the Praikaraha Kabihu Based on the Patrilineal Lineage

The kinship structure in the diagram above illustrates the lineage relationships within the Praikaraha kabihu, which follows a patrilineal system—that is, based on the father's lineage. At the top of the diagram, the Praikaraha kabihu is shown as the parent kabihu, from which family members descend through the male line. Interviews revealed that S.P.M.H. and U.R. are members of the Kabihu Praikaraha who share the same lineage. The diagram shows that S.P.M.H. has three children: the first child is a daughter (P), the second child is a daughter (P), and the third child is a son (L). Meanwhile, U.R. has four children: the first child is a son (L), the second is a daughter (P), the third is a daughter (P), and the fourth is a daughter (P). In the kabihu system of Sumba society, sons play a crucial role as the successors of their father's kabihu lineage. Therefore, sons will remain part of the Kabihu Praikaraha and ensure the continuity of the kabihu from generation to generation. Conversely, daughters generally join their husband's kabihu after marriage, in accordance with prevailing customary rules. Through this diagram, it can be understood that the kabihu serves not only as a family relationship but also as the foundation of social identity, the inheritance of customs, and the continuity of cultural values in the Kampung Raja Prailu community. Thus, the kabihu kinship system has a structure that aligns with the concept of a set in mathematics, namely the existence of members, membership boundaries, and grouping based on specific characteristics. Simply put, the kabihu set can be represented as follows:

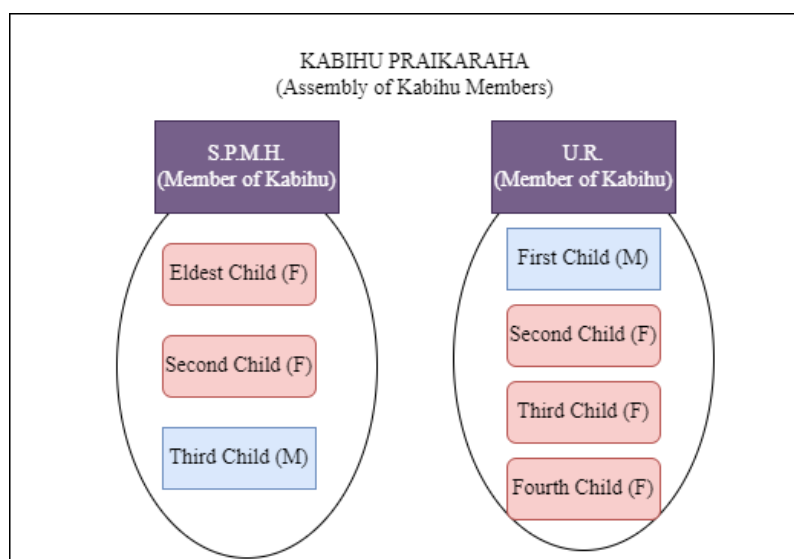


Figure 3. Set Representation of Kabihu Praikaraha

The figure above shows a set diagram of Kabihu Praikaraha membership based on the patrilineal lineage, or the father's lineage. The outer square represents the larger Kabihu Praikaraha set as the parent kabihu that encompasses all family members still within the same lineage. Inside are two Kabihu members, S.P.M.H. and U.R., each of whom has their own descendants. The diagram shows that S.P.M.H. has three children—two daughters and one son—while U.R. has four children—one son and three daughters. The son in the diagram is shown as the successor of the kabihu lineage because, in the kinship system of Sumba society, kabihu membership is inherited through the paternal line. Therefore, the son remains a part of the Praikaraha Kabihu and continues the family lineage from generation to generation.

Meanwhile, daughters remain members of the family, but after marriage they generally join their husband's kabihu in accordance with the customary rules applicable in Sumba society. Thus, this Venn diagram illustrates that the kabihu functions not only as a kinship relationship

but also as a social identity and the basis for customary inheritance in the Kampung Raja Prailiu community.

Kinship Ties as a Representation of Relationships

In addition to illustrating the concept of sets, the research findings also reveal patterns of relationships among members within the kabihu system. These relationships are formed through blood ties, lineage, and inter-kabihu marriages. Informant N.A. explained that all members of a single kabihu are considered to share a blood relationship because they descend from the same ancestor. Meanwhile, U.R. explained that relationships between kabihu are also evident in the traditional marriage system, which connects members from different kabihu. These relationships form a pattern of interconnectedness among individuals as well as between kabihu, arranged in an orderly manner. The types of relationships identified in this study include parent-child relationships based on lineage, sibling relationships within a single kabihu, and marital relationships between kabihu. In addition to inter-kabihu marital relationships, parent-child relationships and sibling relationships within a single family can also be represented as mathematical relationships. These representations are shown in the following figure.

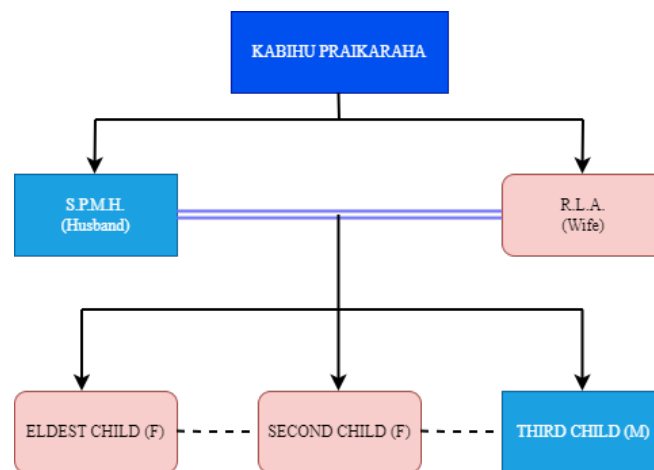


Figure 4. Structure of Kinship Relationships in the Kabihu Praikaraha System

The diagram in [Figure 4](#) illustrates the structure of kinship relationships in the Kabihu Praikaraha system, which includes husband-wife relationships, parent-child relationships, and sibling relationships among children within a single family. This structure depicts the kinship system of Sumba society, which follows a patrilineal lineage—that is, descent traced through the father's line. The diagram illustrates the marital relationship between S.P.M.H. as the husband and R.L.A. as the wife, represented by a horizontal line connecting the two individuals. This relationship forms a family that subsequently has three children: the first child is a daughter, the second child is a daughter, and the third child is a son.

Furthermore, the relationship between parents and children is shown by vertical lines extending from the husband and wife to their three children. These lines illustrate the kinship ties within the kabihu system. In Sumba culture, sons serve as the heirs to their father's lineage and thus remain members of the Kabihu Praikaraha, while daughters generally join their husband's kabihu after marriage. Additionally, the diagram shows the sibling relationships among the children, depicted by dotted lines connecting the three children. These lines indicate

that the children are full siblings because they share the same parents. From a mathematical perspective, these relationships can be interpreted as forms of relations. The relationship between husband and wife represents a marital relation; the relationship between parents and children represents a lineage relation; while the relationship among the children represents a sibling relation. Thus, the diagram demonstrates that the Kabihu kinship system not only holds social and cultural significance but can also be represented through the concept of relations in mathematics.

The Significance of Ethnomathematics in the Kabihu System and Its Implications for Mathematics Education

The research findings indicate that the Kabihu kinship system embodies strong ethnomathematical values. The patterns of grouping members within a kabihu reflect the concept of sets, while the relationships among members and between kabihs reflect the concept of relations. The grouping of communities based on lineage indicates the existence of sets with clearly defined membership boundaries, while marital and customary relationships between kabihu demonstrate the existence of connections or relations between sets. This shows that mathematical concepts are not merely abstract but can also be found in the daily cultural life of communities. Based on the research findings, the Kabihu kinship system can be utilized as a context for mathematics instruction, particularly in the topics of sets and relations. Teachers can use the examples of Kabihu Praikaraha and Kabihu Tunggutari to explain the concepts of set members, subsets, the universal set, and relations between sets. Marital relationships among Kabihu members can also be used to explain types of relations in mathematics. The use of cultural contexts in mathematics instruction can help students understand concepts more concretely because they are directly related to their daily lives. Furthermore, learning based on local culture can increase students' interest in mathematics while fostering an awareness of the importance of preserving local culture. Thus, the Kabihu system not only holds cultural and social value but also has the potential to serve as a contextual and meaningful resource for learning mathematics.

Discussion

Research findings indicate that the Kabihu Praikaraha kinship system functions not only as a marker of membership based on lineage but is also linked to identity, status, marriage rules, and social relationships among kabihu groups. This structure demonstrates that kabihu holds broader cultural significance than merely the grouping of members. This interpretation is important in ethnomathematics because mathematical interpretations must be situated within the cultural context that underpins them (Sari et al., 2026).

The membership structure of kabihu can be interpreted through the concept of sets because there are members who can be identified based on membership criteria applicable within the community. The concept of subsets can be used when there are groups of members that are part of a broader group and have clear membership criteria. Meanwhile, the use of the universal set must be limited to the domain specified in the analysis, such as all members included within the context of the kinship system under study. Thus, the concept of sets is used to represent specific membership structures, not to equate the entire Kabihu social system with a set structure (Wulandari et al., 2026).

Findings regarding the relationships between kabihu also indicate that the concept of mutually exclusive sets should be understood in a limited sense (Kalogerogianni, 2025). An

individual's membership in a particular kabihu may indicate group separation if that individual is not a member of two kabihu simultaneously. However, this condition does not imply that there are no connections between kabihu. Marital relationships, on the other hand, demonstrate the interconnectedness between different kabihu. Therefore, the concept of mutual independence is more appropriate for explaining aspects of membership, while relationships between kabihu are analyzed through the concept of kinship.

Kinship relationships exhibit different relational characteristics depending on the type of relationship identified. Parent-child relationships are directed from parent to child and can exhibit a one-to-many pattern when a parent has more than one child (Nurhamida et al., 2026). These relationships are not symmetrical because the direction of the relationship cannot be reversed with the same meaning. The transitive property also cannot be directly applied because a parent-child relationship does not automatically generate the same relationship in the next pair of individuals. These findings indicate that kinship relationships cannot simply be referred to as "relationships" but must be analyzed based on their mathematical properties.

Marital relationships have characteristics that differ from parent-child relationships. If marital relationships are represented as relations between in-laws, the property of symmetry can be applied if the relationship between the first in-law and the second in-law also holds in the reverse direction. Conversely, the transitive property cannot be established solely based on the existence of a chained marital relationship among kabihu. The determination of a relation's properties must be based on relationships actually found in the research data and aligned with relevant mathematical definitions (Chesnaye et al., 2024).

These findings demonstrate that the mathematical interpretation in this study is not based solely on the form of groupings or relationships but also takes into account the underlying cultural context and meaning. The kabihu system has social rules and values that cannot be fully represented through the concepts of sets and relations. Mathematical concepts are used only to explain specific structures found within the kinship system, while cultural meanings remain grounded in the community's understanding (Itao & Kaneko, 2024).

The findings of this study align with those of Batiibwe (2024) which indicate that cultural structures and activities may contain mathematical concepts that can be identified through an ethnomathematics approach. However, that study had a different cultural context and research focus, whereas this study focuses on the Kabihu Praikaraha kinship system. These differences indicate that ethnomathematics research can be expanded from physical objects and cultural activities to social structures and kinship systems within the Simorangkir & Dewi (2023). This finding represents a novel contribution to the research literature as it reveals the connection between membership structures and relationship patterns in the Kabihu Praikaraha system and the concepts of sets and relations, without disregarding the inherent cultural meanings within them.

The research results also indicate the potential of the Kabihu system as a context for teaching the concepts of sets and relations. This potential is based on the existence of membership structures and relationship patterns that can be linked to mathematical concepts. However, this study has not yet developed instructional materials nor tested their application in the classroom. Therefore, the use of Kabihu in mathematics education remains an opportunity for future research through the development of instructional materials or the testing of culturally-based learning approaches.

Conclusion

This study demonstrates that the Kabihu Praikaraha kinship system in the Kampung Raja Prailiu community possesses a membership structure, kinship rules, and relationship patterns that can be interpreted through the concepts of sets and relations from an ethnomathematics perspective. Membership structure can be interpreted as a set based on the membership criteria applicable in the community, while groups falling within a specific membership scope can be interpreted as subsets. The property of disjointness is applied only to the membership aspect when no member belongs to two kabihu simultaneously. This property is not used to describe the relationships between kabihu as a whole because marital relationships can connect different kabihu. Parent-child relationships can be interpreted as directed one-to-many relationships, whereas marital relationships between kabihu have distinct characteristics, so their nature is determined based on the relationship structures observed. The contribution of this research lies in the advancement of ethnomathematics studies through the lens of the kinship system of the Sumba community. This study not only identifies mathematical forms within the kabihu but first describes the structure and cultural meaning based on community information before conducting mathematical interpretations. Thus, this study offers the perspective that the concepts of sets and relations can be used to analyze specific aspects of the kinship system without oversimplifying the overall social and cultural meaning of the kabihu. This study has limitations regarding the duration of data collection—which was conducted over two field visits—the limited number of informants, and the focus on Kabihu Praikaraha within a single research site. Furthermore, mathematical interpretation still relies predominantly on the researcher because the study has not yet involved the process of developing and testing mathematical representations collaboratively with the broader community. Future research is recommended to include a longer observation period, a more diverse group of informants and Kabihu contexts, as well as direct observation of traditional activities as they occur.

Declarations

- Conflict of Interest** : The authors declare that there are no conflicts of interest.
- Auhor Contributions** : A.T.I.: Methodology, Investigation, Formal analysis, Writing – original draft.
 F.K.N.: Supervision, Methodology, Writing – review & editing.
 N.R.E.: Validation, Formal analysis, Writing – review & editing.
- Data Availability Statement** : Data supporting the findings of this study are available from the author, A.T.I., upon reasonable request.
- AI Statement** : The authors state that generative AI tools were used solely to improve the clarity, grammar, and readability of the English language in the manuscript. All content, research findings, and data analysis were produced by the authors. The authors take full responsibility for the accuracy, originality, and integrity of the manuscript.

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