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Ethnomathematics Of *Betang Damang Batu*: Exploration of Traditional Dayak Ngaju Housing In Tumbang Anoi, Central Kalimantan, In Geometry Materials

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ABSTRACT

Mathematics and culture are often considered unrelated, even though mathematics is an important part of culture that emerges from daily activities. This research is intended to explore the ethnomathematics of *Betang Damang Batu Dayak Ngaju Tumbang Anoi Central* Kalimantan towards the concept of geometry. The approach taken is qualitative with ethnography design. The subjects of this research were Betang Damang Batu itself and two interviewers. Data collection was done by collecting documents and interview results. The results of this study, Betang Damang Batu contains a variety of significant cultural values and can be used as teaching materials in learning mathematics. The concepts of geometry such as volume, surface area, distance of certain objects, length of line segments and angles in *Betang Damang Batu* can be applied to school math materials. Every part and history of *Betang Damang Batu* has a moral value. The large central space represents harmonious relations between families, despite the potential for conflict they managed to maintain peace. The ancestors of the Dayak tribe preserved the forest to obtain quality wood material, which also emphasizes the importance of environmental conservation and avoiding deforestation in order to obtain quality wood. In addition, the shape and structure of the betang has a spiritual meaning, where ancestors always started important activities with traditional ceremonies as an expression of gratitude. There are still many things or buildings in Indonesia, especially Central Kalimantan, that contain ethnomathematics and have never been discussed. It is hoped that this research can be the beginning of further ethnomathematics research.

Keywords: Betang Damang Batu, Ethnomathematics, Geometry, Three-Dimensional Space Objects, Tumbang Anoi

INTRODUCTION

Mathematics and culture are often considered unrelated because mathematics is viewed as neutral, abstract, and free from cultural influence. However, mathematics is an essential part of culture, emerging from everyday activities, making the two inseparables (Pathuddin *et al*., 2023). One form of exploring this connection is through ethnomathematics, which studies mathematical ideas, activities, and procedures integrated into people's daily lives. Ethnomathematics is a field that explores the relationship between

mathematics and socio-cultural contexts, showing how mathematical concepts are produced, disseminated, and distributed within systems of cultural diversity (D'Ambrosio, 1985). Furthermore, ethnomathematics acts as a bridge connecting cultural preservation and local wisdom with technological and artistic advancement through science (Mairing *et al*., 2024; Risdiyanti & Indra Prahmana, 2020).

There is a wealth of ethnomathematics research in Indonesia, owing to its rich cultural heritage. Ethnomathematics research usually explores and connects cultural objects such as clothing design motifs, traditional infrastructure, antiques, and many others with geometric concepts (Turmuzi *et al*., 2023). Therefore, ethnomathematics is often integrated into geometry lessons. Additionally, schools also instill historical and philosophical values in students, which are crucial in shaping their character. These include confidence, sympathy, empathy, respect for others, concern for social issues, and a sense of responsibility (Widodo, 2019). As a result, geometry learning based on ethnomathematics becomes more meaningful (Wahyuni & Safitri, 2023).

Fouze & Amit (2018) stated that there are five aspects of ethnomathematics learning: (1) the ethnomathematics approach teaches that every culture contains mathematical elements and that these cultural elements shape mathematical thinking; (2) ethnomathematics includes all aspects of cultural objects, including their history or creation; (3) mathematical concepts or materials originate from culture and develop into general mathematical concepts; (4) ethnomathematics learning also teaches philosophical values embedded in the culture; and (5) integrating cultural principles and methods with formal mathematics should help students understand and apply mathematical principles, blending cultural values into the goals of mathematics education.

Ethnomathematics is also seen as a solution to overcome students' difficulties in learning geometry. Some difficulties include a lack of motivation to learn geometry and a failure to grasp the material meaningfully. Students often memorize formulas taught in class without being guided to discover those principles, resulting in short-term retention of the formulas (Bora *et al*., 2024), and they struggle to apply them in problem-solving (Irenewati *et al*., 2023). Additionally, ineffective teaching models, poor learning quality, inadequate facilities, and environments unsuitable for geometry content are also major contributing factors (Ali & Ni'mah, 2023; Fitriyani *et al*., 2023; Zahra *et al*., 2024). One way to address these challenges is by implementing ethnomathematics. Positively perceiving ethnomathematics can make it easier for students to learn and appreciate their local culture (Mania & Alam, 2021; Wiryanto *et al*., 2022).

Research shows that ethnomathematics-based learning has several advantages. First, it improves students' understanding of the material (Herawaty *et al*., 2019). Second, it enhances students' representational abilities (Widada *et al*., 2019) and mathematical communication (Hartinah *et al*., 2019). Third, students' ability to solve mathematical problems increases with ethnomathematics-based learning (Jabar *et al*., 2022; Lubis *et al*., 2021; Nur *et al*., 2020; Putri & Junaedi, 2022). Fourth, students develop critical and creative thinking through ethnomathematics learning (Faiziyah *et al*., 2020; Imswatama & Lukman, 2018). Fifth, it improves students' numeracy skills (Manoy & Purbaningrum, 2021). Sixth, students internalize and develop positive attitudes through ethnomathematics (Mairing & Nini, 2023). These findings align with the benefits of contextualizing mathematics in everyday life, specifically through the cultural elements ingrained in society.

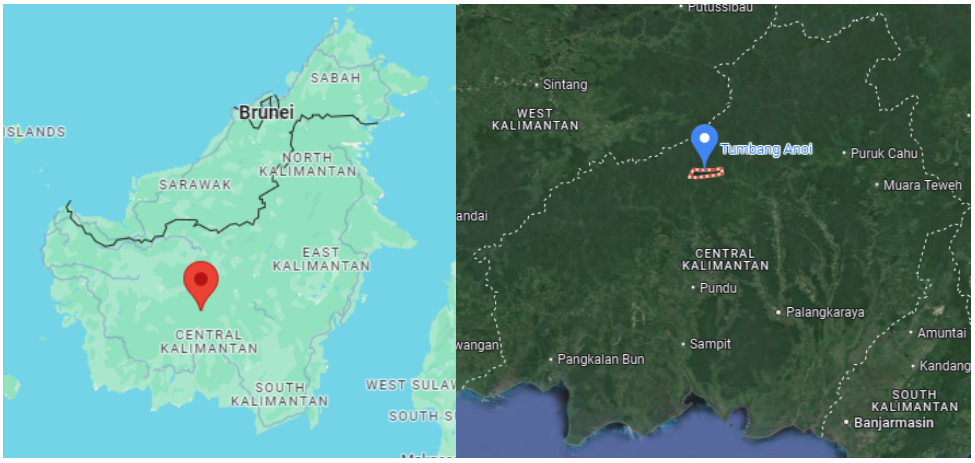
Several studies have explored buildings with strong cultural ties to geometry, such as traditional structures like *bale langgak, bale tani, bale bonter, bale gunungrate,* and *sambi*, all of which incorporate geometric objects (Supiyati *et al*., 2019). *The Gentala arsy*, a traditional building in Jambi, contains geometric elements such as cuboids, octagonal prisms, cylinders, and half-ellipsoids (Fitriani *et al*., 2018), while the *Temple of Heaven* integrates geometric concepts along with religious and cultural values in its structure, interior, and exterior design (Zhang *et al*., 2021). Furthermore, several studies have explored the cultural motifs and dances of the Dayak tribe in Central Kalimantan. For instance, ethnomathematics

learning that adopts *Dayak Ngaju* cultural motifs by Mairing *et al*. (2024) can help students internalize and develop positive attitudes from the local wisdom embedded in these motifs. The concept of *belom bahadat* (living by cultural norms) is embodied in the *dandang tingang* motif, which emphasizes the importance of living ethically with others and the surrounding environment. Mangkin *et al*. (2021) also explored the *Tari Dadas Bawo* of the *Dayak Ma'anyan* tribe for ethnomathematics-based learning. Their findings revealed geometric concepts in the hand movements, footwork, and formations of *Tari Dadas Bawo*, including acute, obtuse, and right angles, two-dimensional geometry such as parallel lines, triangles, and circles, as well as geometric transformations like reflection, rotation, and translation. However, there has yet to be a study focusing on the ethnomathematical aspects of traditional Dayak housing, specifically *Betang*, which is used by the Dayak people as a local cultural product. Therefore, the research problem addressed in this study is: "What ethnomathematical aspects are related to the *Betang* used by *Dayak Ngaju* people in *Tumbang Anoi*, Central Kalimantan?" and "What local values or wisdom can be learned from this Betang?" The findings of this study could enrich previous ethnomathematical studies on the Dayak tribe in Kalimantan, Indonesia, particularly the Dayak Ngaju community in Tumbang Anoi.

The research aims to explore the ethnomathematics of *Betang Dayak Ngaju* in *Tumbang Anoi* Central Kalimantan. *Betang* is a large traditional stilt house of the Dayak people in Central Kalimantan. Its length ranges from 30 to 150 meters, with a width between 10 and 30 meters. The house stands on stilts, raised 3 to 4 meters above the ground. A *Betang* can house up to 200 people, with each family having their own room and kitchen in the partitioned spaces inside the house (Riwut *et al*., 2003). Additionally, future researchers could develop an ethnomathematics-based learning model based on these findings.

RESEARCH METHODOLOGY

This research used a descriptive qualitative approach with an *ethnographic design* (Lodico *et al*., 2010). The research was conducted in Tumbang Anoi village, Central Kalimantan, a historic place for the Dayak people. Tumbang Anoi is located at coordinates 0.8151° S; 113.1680° E. It was the site of a significant meeting in 1894 that ended the tradition of *mengayau*. The meeting took place in a *Betang* (longhouse), which will be studied further through the lens of ethnomathematics. Below is Picture 1 showing the location of Tumbang Anoi.



Picture 1 Betang Tumbang Anoi Map Location

Data collection focuses on answering the following questions: (1) "What is the history of *Betang Damang Batu*?"; (2) "What are the size, shape, and materials of the components of *Betang Damang Batu*?"; (3) "What cultural values can be derived from *Betang Damang Batu*?"; and (4) "How can the mathematical concepts in *Betang Damang Batu* be applied?" The researcher collected data by exploring the cultural object of *Betang Damang Batu*, including the book "*Manaser Panatau Tatu Hiang* 2", photographs, videos, and the size, shape, and structure of Betang Damang Batu by visiting the site directly. Interviews were also conducted with experts, including a Dayak Ngaju building specialist and a cultural leader, *Damang* of Central Kalimantan. The book was used to understand the history of *Betang Damang Batu*, while photos and videos provided detailed views of the cultural object's shape and size for ethnomathematical analysis. Interview results were used to uncover the local wisdom behind *Betang Damang Batu*. These findings are expected to teach mathematical concepts and cultural values inherent in *Betang Damang Batu*.

Data collection and analysis in qualitative research is an inductive process. Data analysis is highly subjective, as the collected data is presented based on the researcher's interpretation. Data analysis (Creswell, 2009; Lodico *et al*., 2010) in this study begins with: (1) Organizing the collected data. The organization starts by focusing on the components of *Betang Damang Batu*, their relationship to mathematical concepts, and the cultural values they represent. (2) Next, the books, photographs, videos, and interview results will be reviewed and further explored. The book will be studied, photographs will be analyzed for their ethnomathematical value, and interviews will be transcribed. (3) Afterward, the interviews will be coded to identify the history and cultural values conveyed by the respondents. The coding will consist of a combination of 7 alphabetic and numeric characters. The first two digits represent the subject code, where the first subject (building expert) will be coded as S1, and the second subject (*Damang*) will be coded as S2. The third and fourth digits represent the topic to be explored: SB refers to the history of the Betang, KB refers to its components, and NM refers to moral values. The last three digits represent the line number in the transcript. For example, S2NM044 refers to the second subject's statement on moral values found in transcript line 44. (4) A deeper description of the photos and interview results will follow. (5) The next step is to triangulate the data by comparing the book with the two interview results. (6) Finally, the researcher will provide an interpretation of the collected data and triangulation results based on their own analysis.

RESEARCH FINDINGS

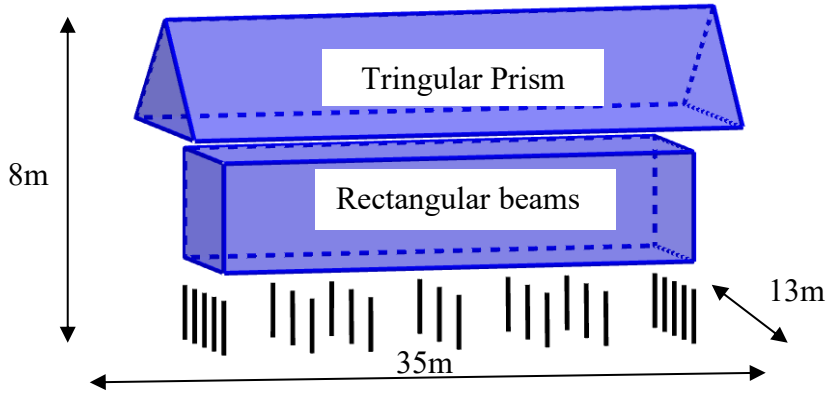
Based on the collection of documents and interviews with sources regarding *Betang Damang Batu* in Tumbang Anoi, Central Kalimantan, Indonesia, the researcher found that there are many cultural elements and ethnomathematical values to discuss and learn from. In this study, the ethnomathematical analysis is divided into three areas of Betang Damang Batu: the exterior, the interior, and the structural aspects. The findings from documents and interviews revealed numerous geometric concepts and local wisdom values embedded in *Betang Damang Batu*.

Exterior of *Betang Damang Batu*

The image below (Picture 2) shows the full view of *Betang Damang Batu*. As seen, *Betang Damang Batu* does not resemble typical houses, as it is 65 meters long and built on high stilts. According to interviews, this structure was historically used as a place of peace and housed several tribes and ethnic groups, requiring a long house with many rooms to accommodate more people. *Betang Damang Batu* symbolizes living in harmony among diverse tribes, as it was built to eliminate hostility and conflict between them. More than 300 people gathered for peace negotiations, including participants from regions such as Central, West, East, South, and North Kalimantan, as well as Sarawak. Even foreign tribes, such as the Dutch and English, stayed and attended the peace meetings. After the peace agreements, *Betang Damang Batu* was inhabited and maintained by *Damang Batu*'s descendants. The many family heads living in *Betang* increased the potential for violations of norms, such as moral misconduct. However, *Betang*

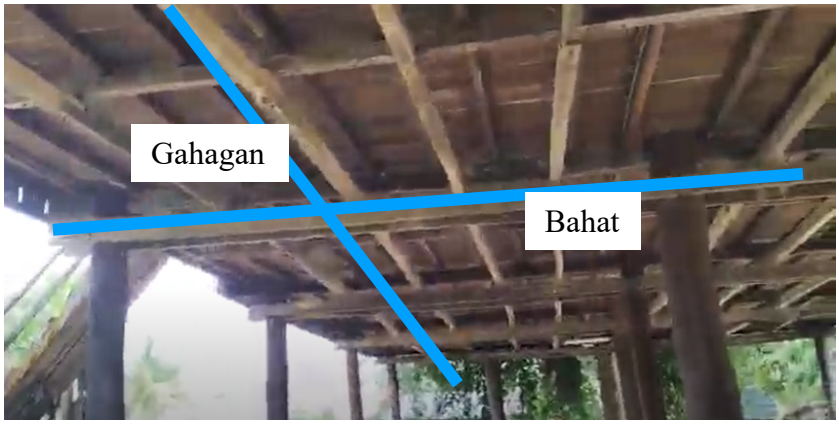
community successfully upheld moral values. Thus, the *Betang* was truly constructed to preserve peace and harmony among families and tribes. Additionally, *Betangs* were built on high stilts to protect the inhabitants from wild animal attacks and threats from enemies who opposed peace between tribes.

Picture 2 The Whole of Betang Damang Batu from Outside



Picture 3 Betang Damang Batu Space Structure

Based on Picture 3, the geometric structure of *Betang Damang Batu* can be seen as an arrangement of three-dimensional shapes, with the foundation pillars forming parallel lines in a patterned arrangement. The roof of *Betang Damang Batu* is shaped like a triangular prism, while the core part of the house is shaped like a rectangular block. This was also confirmed in the interview with the subject related to the structure of *Betang*. Geometric concepts involving three-dimensional shapes, such as volume, surface area, distances between certain objects, line segment lengths, and the angles found in *Betang Damang Batu*, can be applied to high school mathematics material.



Picture 4 Foundation Structure of Betang Damang Batu

Based on Picture 4, the foundation structure of Betang Damang Batu can be seen. There are 25 founding pillars called *jihi* each approximately 2 meters in size with 5 on each side and 3 in the center. *Jihi* are spaced 5 meters apart in each row of foundation pillars. Meanwhile, the vertical wooden beams (*gahagan*) that support the floor of *betang* consist of 10 pieces, and the horizontal wooden beams (*bahat*) consist of 8 pieces. The arrangement of *bahat* and *gahagan* beams is neatly organized, with each row of pillars and beams spaced equally. What's unique about this *betang* is that it was built without using a single nail. The ancestors used rattan bindings to connect *gahagan* and *bahat* beams. The knot they used carries a deep meaning in the Dayak language: *tege peteng bohul tege peteng matei*. Even without the advanced knowledge we have today, they successfully built a *betang* that has stood strong to this day. The wood used is large and strong, as the ancestors preserved the environment by not cutting down trees indiscriminately, allowing them to obtain large, high-quality wood. The current generation may find it difficult to acquire wood of the same quality found in the *betang* due to a more consumerist mindset. Additionally, in Picture 5, there is a staircase leading into the *Betang Damang Batu*, with 20 steps, divided into lower and upper sections, each consisting of 10 steps. During the time *betang* was built, this staircase could be lifted to prevent attacks by *kayau* (headhunting). This has become a myth that persists among the Dayak people today, where children are forbidden from playing outside at night for safety reasons.

Picture 5 Betang Damang Batu Front Stairs

Interior of *Betang Damang Batu*

Based on Picture 6 below, there is a central room and bedrooms inside *Betang Damang Batu*. The central room serves as a meeting room for discussing peace between tribes in ancient times. This room was used for deliberations to make decisions regarding matters such as finding food, cultivating land, expanding *betang*, and making peace-related policies. Their ancestors first implemented a deliberative system to make decisions, and the final say was with *Damang* (their leader). A *Damang* was chosen for his wisdom and greatness, and everyone in *Betang Tumbang Anoi* always accepted the *Damang's* decisions. This practice is still relevant today in choosing leaders—it is the leader's wisdom and capability that should be considered, not their age or family ties. Being a leader is not easy, as it determines the welfare and prosperity of the people. A leader without ability or wisdom, and subordinates who are disobedient and undisciplined, will lead to the downfall of a nation. This can be likened to a group of people sailing in a boat: if led by an incapable leader and disobedient subordinates, when the leader steers the oars westward and the members row eastward, the boat will be destroyed.

This room is also often used for Dayak traditional ceremonies, commonly known as *Naik Dango* ceremony. Every harvest season, they are not allowed to eat or use their harvest before holding *Naik Dango* ceremony. They first offer their harvest to the spirits and farming tools as a form of worship. This demonstrates that their ancestors highly valued gratitude and thankfulness to their gods.

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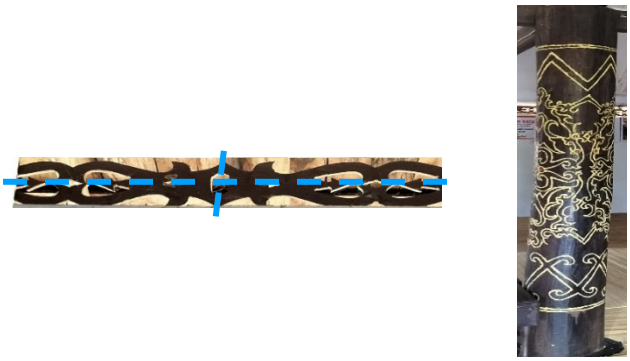
Picture 6 Inside Parts of Betang Damang Batu

Now this room is filled with historical artifacts such as photos, meeting evidence, and other items. Additionally, there is a sleeping area for them to rest after holding peace meetings. They sleep together to foster closer family ties, in line with the philosophy of *Betang house*, which states *Betang house*, my palace, tradition, and culture are my soul and body, the foundation of unity, peace, and harmony *habangkalan penyang karuhei tatau*"



Picture 7 Kelakai Leaf Motif on the Pillars and Ventilation of Betang Damang Batu.

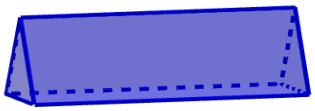
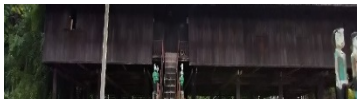
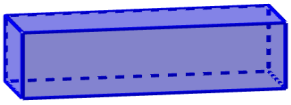
Based on Picture 7 above, each vent and pillar is adorned with carvings of the kelakai leaf. The kelakai leaf motif symbolizes fertility, prosperity, and continuity of life. This means that with the formed sense of family, it is hoped that *Betang house* along with its inhabitants and descendants will enjoy prosperity throughout their lives. As seen in Picture 10, the kelakai leaf motif is also repeated and symmetrical both horizontally and vertically.

Based on Picture 8 below, the unique beam ring structure of *Betang Damang Batu*, known as *bapahan*, can be seen. The uniqueness of *bapahan* is that it is constructed without nails. There are eight *bapahan* with one supporting foundation beam and nine specially shaped *bapahan*. *Bapahan* is also vertically symmetrical, and it is not only symmetrical in two dimensions but also in three dimensions. The shape of *Bapahan* itself carries the meaning of local wisdom, serving as a protector against evil spirits.

Picture 8 Bapahan Betang Damang Batu

DISCUSSION

Based on the findings, *Betang Damang Batu* contains various significant cultural values and can be used as teaching material in mathematics learning. The parts and components of *betang* have geometric properties. It can be seen from the structure of *betang* itself, which is shaped like geometric objects such as triangular prisms and rectangular beams. Additionally, other components like *jihi, gahagan, bahat, bapahan*, and the rooms within *betang* can be used to calculate distances, surface areas, angles, and more. This can serve as teaching material for geometric concepts, such as three-dimensional shapes, including volume, surface area, distances between certain objects, line segments, and angles in *Betang Damang Batu*, which can be applied to high school mathematics subjects. This aligns with previous research that traditional buildings are closely related to geometric concepts (Afriyanto *et al*., 2024; Jannah *et al*., 2024; Meyundasari *et al*., 2024).

***Betang* Component**	**Shape of Geometry**	**Mathematical Concepts**
The roof of Betang 	Triangual Prism 	Volume of a triangual prism = $\frac{1}{2}a \times t_{alas\ segitga} \times t_{prisma}$ Luas permukaan prisma segitiga $= 2 \times \left(\frac{1}{2}a \times t_{base\ of\ the\ triangle}\right) + K_{base\ of\ the\ triangle} \times t_{prism}$ Description: a: length of the Base t: height K: perimeter
Center of *Betang* 	Rectangular beams 	Volume of a triangular prism $= p \times l \times t$ Surface Area of a Triangular Prism $= pl \times pt \times lt$ Description: p: length of the rectangular beams l: width of the rectangular beams t: height of the rectangular beams

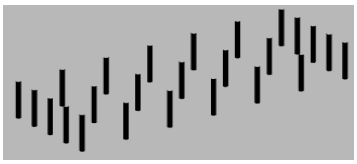
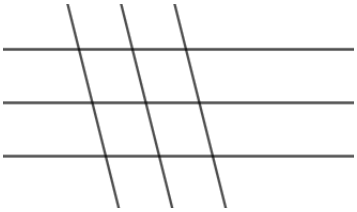
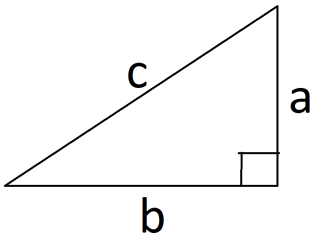
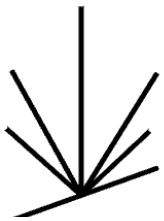
***Betang* Component**	**Shape of Geometry**	**Mathematical Concepts**
Jihi 	Line segment 	Distance from a Line to a Certain Objec $td = \frac{\lvert ax_1+by_1+cz_1\rvert}{\sqrt{a^2+b^2+c^2}}$ Descriptiom: d: distance (x_1, y_1, z_1): point coordinates a, b, c: Coefficients in the Equation of a Line
Gahagan and *Bahat* 	Parallel lines 	Angles on Parallel Lines - Corresponding Angles - Alternate Interior Angles - Alternate Exterior Angles - Same-Side Interior Angles - Same-Side Exterior Angles
Betang Stairs 	Right triangle 	Pythagorean Theorem $c^2 = a^2 + b^2$
Bapahan 	Shape of Geometry 	Symmetry

Table 1 Components of Betang Damang Batu in Relation to Geometric Shapes and Mathematical Concepts

Every part and the history of *Betang Damang Batu* holds moral values. For example, the large central space, which is shared by many family heads, symbolizes harmony. Despite the potential for conflict arising from multiple families living together in a large communal house, such as breaches of etiquette or disagreements due to differences of opinion and perceived injustices, their ancestors successfully upheld moral values and maintained harmony in communal life. Additionally, the wood materials used to build *Betang* were sourced from large, strong trees, made possible because their ancestors valued nature by preserving the forests. This reflects the importance of modern environmental conservation efforts, including avoiding deforestation, to ensure the quality of wood remains optimal, as seen in *Betang's* construction. Some components of *Betang*, such as *bapahan* (the entrance structure), have symbolic meanings, such as offering protection from evil spirits. The ancestors also held spirituality in high regard, always beginning important activities—like harvesting crops or hunting—with traditional ceremonies to express gratitude to God. The Dayak people are well-known for their local wisdom and moral values, which are reflected in their culture and daily activities, such as farming, hunting, discussions, and other communal practices (Poerwadi *et al*., 2023; Steven Alexander & Jacqueline Karimon, 2023).

CONCLUSION

Betang Damang Batu is one of the earliest longhouses and holds significant historical importance as it served as the gathering place for tribes to negotiate peace. *Betang Damang Batu* has many cultural features that are closely related to mathematical concepts. This research reveals that the exterior, interior, and structure of the building are strongly connected to complex mathematical ideas such as spatial structures and symmetry. Advanced geometric concepts, including volume, surface area, distances between specific objects, the length of a line segment, angles, and many others, can be applied to school mathematics curricula. This research contributes to the understanding of the ethnomathematical values embedded in *Betang Damang Batu*. Future studies could focus on using *Betang Damang Batu* in practice problems for students. Each part and the history of *Betang Damang Batu* holds moral values. For example, the spacious central area represents family harmony, demonstrating how the community maintains unity despite the potential for conflict. The ancestors of the Dayak people preserved the forest to obtain high-quality wood, emphasizing the importance of environmental conservation and avoiding deforestation to ensure good timber. Additionally, the shape and structure of *Betang* carry spiritual meaning, as the ancestors always began important activities with traditional ceremonies as an expression of gratitude. There are still many elements or structures in Indonesia, particularly in Central Kalimantan, that contain ethnomathematical significance but have yet to be explored. It is hoped that this research will be the foundation for future ethnomathematics studies.

REFERENCES

Afriyanto, Fauzan, A., Yerizon, Y., & Musdi, E. (2024). Ethnomathematical Insights into Rumah Gadang's Building Form and Ornaments. *AL-ISHLAH: Jurnal Pendidikan*, *16*(2), 2821–2837. https://doi.org/10.35445/alishlah.v16i2.4575

Creswell, J. W. (2009). *Research Design Qualitative, Quantitative, and Mixed Methods Apporoaches. Third Edition.* (9th ed.). Yogyakarta: Pustaka Belajar.

D'ambrosio, U. (1985). FLM Publishing Association Ethnomathematics and Its Place in the History and Pedagogy of Mathematics. *Source: For the Learning of Mathematics*, *5*(1), 44–48.

Fouze, A. Q., & Amit, M. (2018). Development of mathematical thinking through integration of ethnomathematic folklore game in math instruction. *Eurasia Journal of Mathematics, Science and Technology Education*, *14*(2), 617–630. https://doi.org/10.12973/ejmste/80626

Jannah, M., Heru, M. E. A., Wulandari, E., Sabila, F., & Agustina, S. (2024). *Ethnomathematics in The Gayo Traditional House (Case Study of Umah Kantur, Kung Village, Pegasing District, Aceh Tengah)*. *7*(1), 54–71.

Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2010). Methods in Educational Research: From Theory to Practice, 2nd Edition. In *Jossey-Bass* (Issue 3).

Mairing, J. P., Pancarita, & Aritonang, H. (2024). Ethnomathematical Aspects of Learning Geometry and Values Related To the Motifs Used By the Dayak Ngaju Tribe in Central Kalimantan. *Malaysian Journal of Learning and Instruction*, *21*(1), 103–128. https://doi.org/10.32890/mjli2024.21.1.4

Mangkin, D. I., Winda, A., & Dina, H. (2021). Etnomatematika Pada Tari Dadas Bawo Suku Dayak Ma'Anyan. *Prosiding Seminar Nasional MIPATI*, *1*, 33–40.

Mania, S., & Alam, S. (2021). Teachers' perception toward the use of ethnomathematics approach in teaching math. *International Journal of Education in Mathematics, Science and Technology*, *9*(2), 282–298. https://doi.org/10.46328/IJEMST.1551

Meyundasari, M. D., Hastuti, I. D., Syaharuddin, S., & Mehmood, S. (2024). The geometric concepts of the Istana Dalam Loka traditional house: An ethnomathematics study. *Jurnal Elemen*, *10*(2), 305–323. https://doi.org/10.29408/jel.v10i2.25208

Pathuddin, H., Kamariah, & Mariani, A. (2023). Ethnomathematics of Pananrang: A guidance of traditional farming system of the Buginese community. *Journal on Mathematics Education*, *14*(2), 205–224. https://doi.org/10.22342/jme.v14i2.pp205-224

Poerwadi, P., Misnawati, M., Manya, M., & Maya Sari, F. (2023). Literary Phenomenology in Ngaju Dayak Folklore. *Journal of World Science*, *2*(2), 182–196. https://doi.org/10.58344/jws.v2i2.228

Risdiyanti, I., & Indra Prahmana, R. C. (2020). The learning trajectory of number pattern learning using barathayudha war stories and uno stacko. *Journal on Mathematics Education*, *11*(1), 157–166. https://doi.org/10.22342/jme.11.1.10225.157-166

Steven Alezender, & Jacqueline Karimon. (2023). Imej Suku Dayak di Mata Pengarang Melayu: Suatu Penelitian ke Atas Naskhah Syair Perang Cina di Monterado. *Journal of Borneo-Kalimantan*, *9*(1), 1–12.

Turmuzi, M., Suharta, I. G. P., & Suparta, I. N. (2023). Ethnomathematical research in mathematics education journals in Indonesia: A case study of data design and analysis. *Eurasia Journal of Mathematics, Science and Technology Education*, *19*(1), 1–13. https://doi.org/10.29333/ejmste/12836

Wahyuni, I., & Safitri, R. N. (2023). Eksplorasi Etnomatematika pada Masjid Al-Husna Pondok Dalem Semboro ditinjau dari Segi Geometri Ethnomathematics Exploration at Al-Husna Mosque Pondok Dalem Semboro in terms of Geometry. *Jurnal Axioma: Jurnal Matematika Dan Pembelajaran*, *8*(1), 37–50.

Widodo, H. (2019). The Role of School Culture in Holistic Education Development in Muhammadiyah

Elementary School Sleman Yogyakarta. *Dinamika Ilmu*, *19*(2), 265–285. https://doi.org/10.21093/di.v19i2.1742

Wiryanto, Primaniarta, M. G., & de Mattos, J. R. L. (2022). Javanese ethnomathematics: Exploration of the Tedhak Siten tradition for class learning practices. *Journal on Mathematics Education*, *13*(4), 661–680. https://doi.org/10.22342/jme.v13i4.pp661-680