

Etnomathematics: Exploration *Tapis Lampung* on Two-Dimensional Figure and Social arithmetic's

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ABSTRACT

This study aims to describe ethnomathematics activities in the manufacturing process, explain the two-dimensional figure, and describe the introduction of social arithmetic through motifs on Tapis Lampung. The sample in this study is the home craftsman and homeowners of Tapis Lampung production. This type of research is a qualitative study using an ethnographic approach, where research is conducted to explore human behavior that occurs in certain cultures. The data collection technique is by interview, observation, and documentation. The results of this study are as follows: 1) the existence of ethnomathematics activity in the manufacture of Tapis Lampung; 2) on six motifs of Tapis Lampung in which there are two-dimensional figures, namely square, triangle, trapezoidal, rectangular, rhombus, kite, and circle; 3) based on the size and results of the final product of Tapis Lampung, a mathematical topic is found, namely social arithmetic at the selling price and buying.

Keyword: Etnomathematics, *Tapis Lampung*, two-dimensional figure, social arithmetic

ABSTRAK

Penelitian ini bertujuan untuk mendeskripsikan aktivitas etnomatematika dalam proses pembuatan, menjelaskan bentuk-bentuk bangun datar, dan mendeskripsikan pengenalan aritmetika sosial melalui motif pada kain Tapis Lampung. Sampel pada penelitian ini adalah pengerajin rumahan kain Tapis dan pemilik rumah produksi kain Tapis Lampung. Jenis penelitian ini adalah penelitian kualitatif dengan menggunakan pendekatan etnografi, dimana penelitian dilakukan untuk mendalami perilaku manusia yang terjadi pada budaya tertentu. Teknik pengumpulan data yaitu dengan cara wawancara, observasi, dan dokumentasi. Hasil dari penelitian ini adalah sebagai berikut: 1) adanya aktivitas etnomatematika pada pembuatan kain Tapis; 2) pada 6 motif kain Tapis Lampung yang didalamnya ada bentuk bangun datar yaitu persegi, segitiga, trapesium, persegi panjang, belah ketupat, layang-layang serta lingkaran; 3) berdasarkan ukuran dan hasil produk jadi kain Tapis, ditemukan topik matematika yaitu aritmetika sosial pada harga jual dan harga beli.

Kata kunci: Etnomatematika, Kain Tapis Lampung, Bangun Datar, Aritmetika Sosial

INTRODUCTION

Mathematics is a science related to patterns and formations, where mathematics is always present, starting from small concepts related to calculations in everyday life (Isrok'Atun, 2020). The link between the applied-mathematical concepts and culture in an area or local culture is known as



ethnomathematics (Dharma, 2019). Ethnomathematics is considered a program that has a certain goal for students to apply some mathematical ideas, and concepts for the problem-solving of everyday activities (Utami et al, 2022). People naturally hold some mathematical activities in grouping, counting, measuring, designing buildings or tools, making patterns, determining locations, playing, explaining, and so on (Rachmawati, 2012; Rahayu, Snae, & Bani, 2020). In other words, ethnomathematics is defined as the special ways used by a certain group of people or culture in mathematical activities (Susilo & Widodo, 2018: 121).

The significance of ethnomathematics apparently fosters the students not only to understand mathematics in the classrooms but also to put into practice some applied concepts of mathematics in their own culture and appreciate its values (Wijayanti, 2017). Mathematics itself has the meaning of a systematic discipline to examine patterns of relationships, art, and language, all of which are studied logically and useful for assisting humans to understand and solve some social, economic, and natural problems (Hamdi, 2017; Fatkhurohman et al, 2021).

There is an enormous space for developing ethnomathematics in the diverse culture and ethnicity with huge space of research possibility. There have been some accomplishments of ethnomathematical research issues, such as traditional houses (Sari, et al., 2018; Febriyanti, 2017), traditional clothes, traditional games (Rusliah, 2016), traditional handicrafts (Hartoyo, 2011; Prabawati, 2016), traditional cloth of a region (Sudirman, et al., 2018), traditional songs, historical places (Lisnani et al., 2020; Alvian et al, 2021), traditional languages (Muhtadi, et al., 2017), traditional ceremonies (Mahyudi & Rofika, 2019; Irfan et al, 2019; Firdaus et al, 2020), objects-traditional objects (Faqih, et al., 2021), batik's (Wahyudi et al, 2021; Fatkhurohman et al, 2021), and implementation of Local Culture-Based Ethnomathematics in Mathematics Learning at Elementary School Level (Putra & Indriani, 2017).

Various studies on ethnomathematics have also been evolved in several mathematical topics in the form of geometric transformations (Anderha & Maskar, 2019), the concept of modulo arithmetic (Yuniawatika, 2015; Agustina, 2016), number recognition material, two-dimensional figures, and probability (Rusliah, 2016). The use of traditional fabrics in ethnomathematical research such as *Batik* is also carried out by other researchers (Prahmana & D'Ambrosio, 2020). The researchers focused on *Tapis* Cloth as the traditional cloth of Lampung province. The paper would put it in the center of attention for searching the meaning of the different patterns, and shapes. Moreover, these mathematical ideas emerge naturally through the production process of *Tapis*. In this cultural conservation, ethnomathematics would take an important role in preserving the cultural heritages in Lampung, especially during the teaching-learning process in the schools. Because of the continuity of the teaching-learning process, the valuable skills of craft production naturally could be taken over by the next generation.

The widespread of *Tapis* Cloth usage is to foster the sense of belonging or connectedness of Lampung people to a social, spatial, cultural of their own community. In other words, *Tapis* Cloth is one of the most important symbols of their cultural identity. The narrative of *Tapis* Cloth would be an incredible story of Lampung culture. In this stage, ethnomathematics would become the bridge for deeper interaction between the students and the common people. Additionally, the dialogue

between mathematics science and the local culture would be more beneficial for both sides. Mathematics would no longer be a scary science for the students. They would love mathematics and their own culture as well, just similarly killing two birds with one stone. Over and above that, the collaboration between the students and the community would emerge new habits of everyday scientific research attitude. Just as importantly, the paper would contextualize mathematics science in the local culture through everyday occasions (Putra & Indriani, 2017). In other words, there are abundant ethnomathematics resources to elaborate from these cultural crafts. It must be remarkable findings from this cultural-based mathematic research.

The paper raises the shapes of two-dimensional figures on the *Tapis* motifs and social arithmetic through the prices and marketing management. The buyers and the users of this entrepreneur's product of the crafts are not only from Lampung but the other provinces as well. The motifs applied to the cloth are applied with a tie and lock technique which produces motifs in the form of a tree of life and buildings, symbolizing the ancestral spiritual connection and there are also patterns in the form of animals, sun, moon, and jasmine flowers (Wilujeng, 2011).

METHOD

The research conducted by the researcher is using qualitative research that is descriptive and tends to analyze the condition of natural objects where the researcher is the object of the key instrument (Hermawan, 2019). As an observer participant, the writer includes observations, textual or visual analysis, and interviews, to answer questions about the 'what', 'how' and 'why' of a phenomenon, rather than questions of 'how many' or 'how much'. Through the intensive interviews, the paper is to access the thoughts and feelings of study participants, how to ask the informants to talk about things that may be very personal to them. On the purposive and selective sampling, the paper tried to collect in-depth and detailed information about the phenomenon under investigation.

The paper is concerned with an ethnographic approach which is carried out deeply about human behavior that occurs in a particular group or culture, with the aim of understanding culture from the prevailing side of the culture or cultural group. The ethnographic research data were analyzed in the field according to the context or situation that occurred at the time of data collection (Sujarweni, 2014). The data collection used interview and observation sheets. The paper focused on the three informants; Firstly, traditional craftsman living in Gumukrejo village, Pringsewu district. The craftsman's skill is to develop and decorate the pattern that had been basically designed by the other craftsman. Secondly, part-time craftsman living in Lugusari village, in the same district as the first informant. She spends her spare time taking care of the kids while decorating these *Tapis* crafts.

In general, it needs different duration to accomplish one sheet of *Tapis* crafts, some are completed in five days, even during coffee harvest season one sheet of *Tapis* could be ready for sale in some weeks. Thirdly, the owner of the *Tapis* production house located in Lugusari. She collected *Tapis* crafts from the craftsmen around the district and put the finishing touches on the crafts before displaying them in the store at Wates district. The data collection is concentrated on the interview with a total of seven question items. The crucial issue of the topics is the types of

Tapis crafts, tools, and materials for *Tapis* crafts production process, *Tapis* craft pattern, and the prices of each product. The paper also mentions the handmade *Tapis* crafts production house, the materials needed, and finishing touches, to search for abundant patterns that exist in Lampung *Tapis* to construct a narrative analysis in mathematic viewpoints. Documentation is another important source of data to provide broadly information for the research process carried out.

The research procedure of the ethnographic approach by Spradley (Santoso, 2016; Spradley, 2006) is divided into several steps, namely: 1) determining the informants, researchers choose three informants to explain about *Tapis*; 2) conducting interviews with informants, the interviews sheets were conducted as the information; 3) making ethnographic notes used data interviews; 4) asking descriptive questions such as when the people used *Tapis* 5) conduct analysis of ethnographic interviews; 6) make a domain analysis; 7) ask structural questions, such motifs and kinds of *Tapis*; 8) make taxonomic analysis; 9) ask contrasting questions; 10) make component analysis; 11) discover cultural themes; 12) write an ethnography. The data analysis technique used is the Miles and Huberman method. Whatever the data analysis steps carried out by the researcher are in the form of data reduction, data presentation, and conclusion (Wijaya, 2018).

RESULT AND DISCUSSION

Ethnomathematical Activities in the Process of Making Tapis Lampung

The ethnomathematical research would describe the informants from various backgrounds, and during the interviews, there are some abbreviations, such as initial "P" which is researcher, initial "S1" which is the first informant, who is the owner of *Tapis* production house, initial "S2" and "S3" which is the second and third informants, who are *Tapis* craftsmen.

The researchers interview with the owner of *Tapis* production house (S1). Living in Lugusari district, she is the owner of Lampung *Tapis* production house employing some workers and *Tapis* craftsmen for different skills such as motif designers, painters, and workers in the craft shops locate around *Wates* district and central *Pringsewu* district. The following are the conversation for gathering information from the first informant:

R : Could you please show me some products of Tapis Cloth over here?

S1 : No problem. Come with me, please.

R : How do you explore the motif design of the Tapis Production House?

S1 : Actually, we have no special motif here, we just preserve and develop a little bit some popular and contemporary motifs already existing in Lampung Tapis tradition.

R : How many types of Tapis Cloth do you produce?

S1 : There are several types and mixed colors of Tapis with Antik Bunga motifs, for instance, Hiasan Dinding Kaligrafi motif, Tumpal motif, Kotak motif, and a Sasab Motif on a Tapis scarf.

R : By the way, how much is this Tapis scarf?

S1 : We sell quality products at reasonable prices. Just with IDR. 100,000, this beautiful scarf will be yours.

R : This seems great. For such high-quality products, how many employees do you recruit, ma'am?

- S1 : Well, we hire some incredible Javanese workers here. They are industrious, careful, and prudent, but the most important thing is they have a total commitment for this art production, Miss.
- R : I see. As far as I know, these art products are not for everyday life dress code. So, I am curious who are your customers?
- S1 : Good question. Usually, these products are for dancers, performers, and special occasions such as wedding ceremonies, especially for the bride and the bridegroom. Moreover, there are some different types and motifs Tapis craft according to ethnicity. For instance, in the Lugusari district, the products are characterized by the form of diamonds. Other ethnicities such as Tapis Krui and Abung also have different patterns and prices.
- R : What are the price determinants of the Tapis Cloth, ma'am?
- S1 : I can simply say that it depends on the type and level of complex designs.

The researchers interview with the second informant (S2). In this part, the focus of the observation was tools and materials for the craft production process, such as a table used as a *Tapis* base, needles, gold thread, scissors, and *Tapis* that already has a predetermined pattern or motif.

The *Tapis* craftsmen in the picture are natives of the Lugusari district, their daily activities are housewives. While doing some housework such as taking care of the children, they also make some money from the crafts production process as a part-time job. The results of interviews or interview transcripts after data reduction with the second subject are as follows:

- R : Did you make a decision for all the motifs Mam?
- S2 : Unfortunately not. Somebody designed it, I simply follow the pattern carefully.
- R : How fast do you finish one piece of Tapis craft, ma'am?
- S2 : I'm not sure, ma'am, because this is a part-time job, if you don't have any work, you can do it sometimes for a week, half a month and even more. The production is always in progress while taking care of children, or doing the other housework, but not during the coffee harvest season. I prefer to be there for making more money during the season.

Interviews were also conducted with craftsmen in the village of Gumukrejo, Pringsewu Pagelaran, Lampung province, Indonesia. These craftsmen work on *Tapis* to fill their spare time while looking after their children. As shown in the conversation below, for more effective data usage.

- R : What are the tools needed to make Lampung Tapis crafts?
- S3 : The tools used in the manufacture of this Tapis include scissors, needles, gold thread, and sewing thread, a table
- R : How did you determine the motif on the Lampung Tapis?
- S3 : You did not determine your own motif, but the motif that you made was determined from the Tapis production at the Gumuk Rajin Tapis Lampung production house in Bandar Lampung city. So, mom just does it without determining her own motive and when it finished, she sends it to the city because she is only a home craftsman.
- R : What motif are you making right now and how long does it take to finish one Tapis?
- S3 : Mother is making Tapis with the motif of Matta Kibaw a combination of gunungan and jasmine, usually it takes you three weeks to complete one Tapis with a length of up to 1 meter.

Based on the results of the three research subjects, the researchers got information about different things, namely the first informant about various motives and the second informant's price about the duration of making the filter. The third subject about Tapis making techniques. The conclusion from the results of interviews with the three research subjects is to get to know seven types of *Tapis* Lampung and 6 motifs on *Tapis*, recognize two-dimensional figures and also know the selling price of *Tapis*. The types of Lampung *Tapis* are presented in Table 1.

Table 1. Types of Tapis Lampung

No	Types of <i>Tapis</i> Lampung	Figure of <i>Tapis</i> Lampung	Interview result
1	<i>Tapis Raja Tunggal</i>		This <i>Tapis</i> is in the form of a warp weft is woven sarong, the basic material of which is cotton, with horizontal stripes of red, green, yellow, and black colors. This ornament is embroidered with gold thread and cotton thread. The motives are people on a boat, people waiting for horses, <i>pucuk rebung</i> , stars and <i>pilin</i> . It is usually used by the wife of the eldest relative in traditional ceremonies such as marrying children or taking titles.
2	<i>Tapis Raja Medal</i>		This <i>Tapis</i> is a warp weft sheath. The basic material is cotton yarn, horizontally striped in red, black, yellow, and green colors. The motive is that the person on the top of the rato is pulled by people, <i>ayam nyecak konci</i> and <i>pucuk rebung</i> .
3	<i>Tapis Laut Linau</i>		This <i>Tapis</i> is a warp weft woven sheath. The base material is cotton thread with horizontal stripes in black, brown, blue, red and pink colors. The motifs used are <i>pucuk rebung</i> , rhombus, <i>sasab</i> , and butterflies. This cloth is used by bridesmaids or when dancing Cangget.
4	<i>Tapis Laut Silung</i>		This <i>Tapis</i> is a warp weft woven sheath, the basic material of which is horizontally lined cotton yarn with red, mangosteen, dark blue and light blue colors. The motifs include <i>tajuk berayun</i> , <i>pucuk rebung</i> , <i>susun</i> , <i>sasab</i> , rhombus. This cloth is worn by the wives of distant relatives and the bridesmaids of Cangget dancers.
5	<i>Tapis Jung Sarat</i>		This <i>Tapis</i> is a warp weft woven sheath. Made of cotton thread with horizontal stripes in red, brown and white colors. The motives include <i>pucuk rebung</i> , <i>sasab</i> , <i>matta kibaw</i> . The cloth worn by the bride and groom during traditional ceremonies.

No	Types of <i>Tapis</i> Lampung	Figure of <i>Tapis</i> Lampung	Interview result
6	<i>Tapis Balak</i>		This <i>Tapis</i> is a warp weft woven sheath. The basic material of the cloth is cotton yarn with large and small horizontal stripes in light brown, dark brown, red and blue colors. The motifs are sasab with a canopy texture on a small sasab, pilin motifs, naga motif, tajuk berayun motif, and glass patches with red and green colored threads. This cloth is worn by women who are old and balanced.
7	<i>Tapis Cucuk Andak</i>		This <i>Tapis</i> is a warp weft woven sarong with the basic cloth of horizontally striped cotton thread and the colors are red, black, yellow, and brown. The motifs used are <i>sasab pucuk rebung</i> , <i>iluk keris</i> , <i>bunga motif</i> , and <i>moci</i> patches. This cloth is used by the balancer

While the motifs or patterns on *Tapis* Lampung, are generally described in Table 2 as revealed by Barkah (2019).

Table 2. Motifs and Philosophical Meaning of *Tapis* Motifs

No	<i>Tapis</i> Lampung Motifs	Image of <i>Tapis</i> Lampung Motifs	Interview result
1	<i>Sasab</i> Motif		The motif is a motif made of gold threads arranged horizontally on the base cloth. The width ranges from 2-10 cm.
2	<i>Pucuk Rebung</i> Motif		The motif is also called the canopy motif, which symbolizes life and strength that comes from within.
3	<i>Naga</i> Motif		The motif symbolizes greatness which is also the influence of culture from China.
4	<i>Hewan Tunggang</i> Motif		This motif symbolizes a person's degree in indigenous peoples.
5	<i>Unggas atau Burung</i> Motif		This motif is a symbol of greatness and majesty
6	<i>Antik Bunga</i> Motif		This motif symbolizes beauty
7	<i>Matta Kibaw</i> Motif		This motif is found in the type of <i>Tapis jung sarat</i> cloth which is usually worn by brides during traditional ceremonies.

The results of observations, it can be found the results of observations made by researchers. This validation sheet has been validated by a teacher who is competent in his field. The results of the observations are as in Table 3.

Table 3. Observation results of Tapis Lampung Motifs

No	Observed object	Results documentation	Mathematics concept	Notes observation
1	<i>Mata Kibaw</i> motif		<ol style="list-style-type: none"> 1. Equal triangle foot 2. Trapezoid elbow 3. Trapezoid isosceles 4. Rectangle 	This motif is found in 3 two-dimensional figures, namely triangles, trapezoids, and rectangles.
2	<i>Antik Bunga</i> motif		<ol style="list-style-type: none"> 1. Rhombus 2. Trapezoid isosceles 3. Triangle 4. Rectangle 5. Square 	This motif is found in two different <i>Tapis</i> colors. Although the colors are different, the patterns and shapes and sizes are the same. In this motif found five shapes of two-dimensional figures.
3	<i>Hiasan Dinding "Kaligrafi"</i> motif		<ol style="list-style-type: none"> 1. Kite 2. Equal triangle Foot 	This motif usually contains the scriptures of the Quran. In the motif, only two shapes of two-dimensional figures are two-dimensional figure
4	<i>Tumpal</i> motif		<ol style="list-style-type: none"> 1. Equal triangle foot 2. Equal triangle side 3. Rhombus 4. Circle 	This motif has four shapes of two-dimensional figures found in this motif.
5	<i>Kotak</i> motif		<ol style="list-style-type: none"> 1. Square 2. Equal triangle Foot 	This motif has two shapes of two-dimensional figures found in this motif.
6	<i>Pucuk Rebung</i> motif		<ol style="list-style-type: none"> 1. Square 2. Triangle 3. Rectangle 	In this motif found two shapes to two-dimensional figures.

Two-Dimentional Figure on Tapis Lampung Motif

In every *Tapis* motif encountered by the researcher during the research, a two-dimensional figure was found on the *Tapis* motif. In Figure 1 describes *matta kibaw* motif have the two-dimensional figure obtained are isosceles triangles (Figure 1a), right-angled trapezoids (Figure 1b), isosceles trapezoids (Figure 1c), rectangles (Figure 1d).



(a) Isosceles Triangle



(b) Elbow Trapezoid



(c) Isosceles Trapezoid



(d) Rectangular

Figure 1. The two-dimensional figure on *matta kibaw tapis* motif

Figure 2 describes the two-dimensional on the *antik bunga tapis* motif with a floral theme, namely the red Lampung *Tapis*, the researchers found a two-dimensional figure in the form of a rhombus (Figure 2a), isosceles trapezoid (Figure 2b), square (Figure 2c), triangles (Figure 2d), and rectangles (Figure 2e).



(a) Rhombus



(b) Trapezoid



(c) Rectangle



(d) Triangle



(d) Rectangular

Figure 2. The two-dimensional figure on *antik bunga tapis* motif

Figure 3 describes the two-dimensional on the *pucuk rebung tapis* motif, it can be seen that there are types of two-dimensional figures that exist in the motifs in the form of a square (Figure 3a), an isosceles triangle (Figure 3b), and a rectangle (Figure 3c).



→ Rectangle



(a) Rectangle



(b) Isosceles Triangle



(c) Rectangular

Figure 3. The two-dimensional figure on *Pucuk rebung tapis* motif

Figure 4 describes the two-dimensional on *hiasan dinding tapis* motif, there are several two-dimensional figures in the form of a kite (Figure 4a) and an isosceles triangle (Figure 4b). According to the results of the interview, *hiasan dinding* motif is a modified motif. The *kaligrafi* motif on *Tapis Lampung* is usually used for wall decoration in homes.



(a) Isosceles Triangle



(b) Isosceles triangle

Figure 4. The two-dimensional figure on *hiasan dinding tapis* motif

Figure 5 describes the two-dimensional on the *kotak tapis* motif, there are various shapes of two-dimensional figures in the form of squares (Figure 5a) and isosceles triangles (Figure 5b).



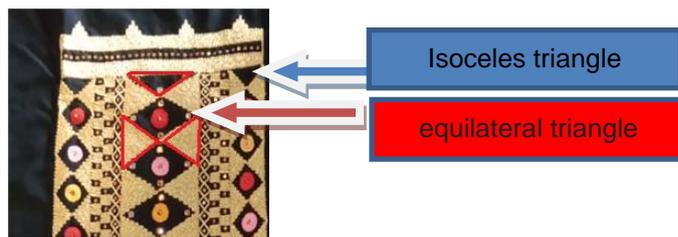
(a) Square



(b) Isosceles triangle

Figure 5. The two-dimensional on figure *kotak tapis* motif

Figure 6 describes the two-dimensional on the *tumpal tapis* motif, there are various two-dimensional figures in the form of isosceles and equilateral triangles (Figure 6a), rhombuses (Figure 6b), and circles (Figure 6c).



(a) Isosceles Triangle and Equilateral Triangle



(b) Isosceles Triangle



(c) Rectangular

Figure 6. The two-dimensional figure in *tumpal tapis* motif

Social Arithmetic Through Tapis Lampung Motifs

The *Tapis* that has been finished being made by the *Tapis* craftsman is then handed over to the *Tapis* production house, from the *Tapis* production house, then the *Tapis* is sold to the public at different prices. One of the production houses that sells *Tapis* Lampung, which is located in the Wates district, Pringsewu Lampung, is precisely located near the rest area in the Pringsewu district. The selling price of *Tapis* and even then varies depending on the motif of the *Tapis* and the results of the *Tapis* can be made of various crafts, such as purses and bags. The selling price of *Tapis* can be seen in Table 4.

Table 4. Selling Price of *Tapis* Lampung

No	<i>Tapis</i> Motifs	Selling Price
1	<i>Antik bunga</i> motif	Rp. 1.300.000
2	<i>Kotak</i> motif	Rp. 750.000
3	<i>Kaligrafi</i> motif	Rp. 650.000
4	<i>Tumpal</i> motif	Rp. 350.000
5	<i>Matta kibaw</i> motif	Rp. 2.500.000
6	<i>Pucuk rebung</i> motif	Rp. 600.000

In the data described in Table 4, it can be seen that each motif has a different price. The price of each motif is different because each motif has its own characteristics, the method of manufacture, and the level of difficulty and complexity of each different motif. So that's what causes each motif on *Tapis* to have a different price. The *Tapis* Lampung that is sold has other features because this *Tapis* is done by following a pattern that has been made or using manual tools.

In addition, the finished Lampung typical *Tapis* can be processed into various forms of crafts. One form of craft that can be made is a *Tapis* bag or purse. The following is a list of selling prices for each form of bag or wallet made of Lampung *Tapis*. The selling price of *Tapis* craft in the form of wallets and bags is listed in Table 5.

Table 5. Selling Prices of Bags and Wallets Based on *Tapis* Lampung

No	Lampung <i>Tapis</i> Craft Form	Pictures of Lampung <i>Tapis</i> Crafts	Selling price
1	<i>Tapis</i> bag		The average price of a <i>Tapis</i> bag = Rp. 300,000
2	<i>Tapis</i> purse		Size S = Rp.150.000 Size M = Rp. 200.000 Size L = Rp. 300.000

Many previous studies on Ethnomathematics in teaching and learning for mathematics teachers, such as research by Sunzuma & Maharaj (2020) which studies exploring Zimbabwean Mathematics Teachers' Integration of Ethnomathematics Approaches into The Teaching And Learning of Geometry. Sunzuma et al (2021) reviewed A Comparison of the Effectiveness of Ethnomathematics and Traditional Lecture Approaches in Teaching Consumer Arithmetic: Learners' Achievement and Teachers' Views. Osorio (2016) discuss the importance of the indigenous Gunadule school curriculum min alto Cayman, South America considering the sociocultural, Ethnomathematics, and inculturation perspective. Mania & Alam (2016) showed that Teachers' perception toward the use of ethnomathematics approach in teaching math.

That means the researchers in many countries in the world have realized the significance of exploring Ethnomathematics in the culture of society in their country. The overall results of this study explain that mathematics and culture are parts that are integrated with each other in mathematics learning and can be developed in the future in mathematics learning at various levels, especially elementary school level.

CONCLUSION

Based on the results of the ethnomathematical exploration in *Tapis* Lampung, the researchers conclude there was ethnomathematical content in the form of cultural and mathematical integration that were interrelated with each other. The cultural content is that *Tapis* Lampung is often used at official events in the form of traditional ceremonies and weddings and there is a philosophical meaning in each Lampung *Tapis* motif. Mathematical content obtained from the results of this study is geometric geometry and social arithmetic in learning mathematics at the elementary level.

The mathematical content is obtained from *Tapis* motifs are two-dimensional figure. The types of two-dimensional figures found in the *Tapis* motif are: triangular, trapezoidal, rectangular two-dimensional figures on the *matta kibaw* motif; two-dimensional figure rhombus, trapezoid, triangle on the *antik bunga* motif; rectangular, triangular on the *pucuk rebung* motif; kite on a *hiasan dinding kaligrafi* motif; build squares, triangles on the *kotak* motif; triangle, rhombus, circle on a *tumpal* motif.

Futhermore, each *Tapis* motif can be sold at different prices and besides that *Tapis* Lampung can be made into wallets and bags which are sold at different prices depending on the

motif and the level of complexity of the motif, indicating the concept of social arithmetic especially selling price and buying price.

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