Mensural classifiers and traditional measuring tools used in Acehnese (Indonesia)

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This study investigates the mensural classifiers along with various traditional measurement tools used by the Acehnese community in Pidie Jaya District, Aceh Province, Indonesia. The data for this qualitative research with an ethnographic approach was obtained from five sub-districts in Pidie Jaya District. Elicitation techniques and non-participant observation techniques were employed to collect data from 12 selected informants. Pictures of these tools were taken for documentation. It was found that there are 23 mensural classifiers for the volume measurement unit (*kai, sukèe, ndhie, siblakai, cupak, arè, gantang, pacôk, kulah, naléh, gunca, kuyan, tayeun, gaca siarè, gaca sicupak, gaca sikai, glok, cawan, mok, cinu, tima*, *yôk,* and *kalè*), one mensural classifier for width measurement unit (*naléh*) and three mensural classifiers for weight measurement unit (*manyam, bungkai,* and *katoe*). These traditional measuring tools are made from parts of plants, recycled goods, and even items sold in the market but are considered traditional by the community, as well as antiques that are believed to have originated from abroad. It is expected that the results of this research can be used as documentation of the Acehnese traditional heritage as an effort to preserve a regional culture in Indonesia. Future research on this topic should also investigate traditional measuring tools that use parts of the human body as measurements because they also exist in Acehnese society.

Keywords: Acehnese, mensural classifiers, traditional measuring tools, traditional heritage

1. Introduction[1]

Acehnese (ISO 639-3: ace) is a language of Indonesia; most of its approximately 2.5 million speakers live in the Aceh Province (Wildan 2010, Yusuf 2013). In addition to the Aceh community, other communities in Aceh speak Javanese, Gayonese, and Bataknese (Suryadinata *et al.* 2003). The Acehnese language speakers are 1.19% of the total population of Indonesia (Na'im and Syaputra 2012). Acehnese is divided

[1] We thank *Lembaga Penelitian dan Pengabdian kepada Masyarakat* (LPPM), or Institute for Research and Community Services, Universitas Syiah Kuala, for financially supporting this research with grant number 140/UN11.2.1/PT.Ol.03/PNBP/2021.

into four dialects: Greater Aceh, Pidie, North Aceh, and West Aceh. From one dialect to another, there are differences in the phonology and the choice of words for certain expressions that sometimes lead to misunderstandings in communication (Asyik 1987). This article will address the quantifiers in the Acehnese language irrespective of the dialect.

In counting objects, some languages only need a quantifier. On the other hand, some languages require a numeral classifier. A quantifier is different from a numeral classifier: a quantifier can be used to measure various kinds of objects, while a numeral classifier can only classify certain types and groups of objects (Ahrens 1994), either based on the inherent properties of the object or the tool used to measure it (Aikhenvald 2000). Almost all languages have a quantifier (Aikhenvald, 2006), but some languages need a classifier. A language that requires a classifier is called a classifier language (Aikhenvald 2000, Chierchia 1998, Li 1999, Tang 2004).

Classifier languages can be found in parts of Central and Latin America, Europe, Africa, Australia, and mostly in Asia (Aikhenvald 2000). Slightly different from Aikhenvald (2000), Gil (2013) states that classifier languages are mostly found in Austronesian, Sino-Tibetan, and Austro-Asiatic languages. Smaller numbers of classifier languages are found in other languages such as Japanese, Korean, Niger-Congo, Arawa (Central America and Latin America), Mayan (Central America), Na-Dene (Canada and United States), Uralic (Hungary), and Altaic (Middle-East and Russia).

Acehnese, too has its methods for classifying objects as well as determining the number of things. One of those is measuring using certain tools, such as parts of the human body and traditional measuring tools. However, up to now, researchers who conducted studies on Acehnese have not yet agreed on the classifiers in the language. For example, Daud and Durie (1999) claim that *arè* is categorized as the volume measurement unit equal to 'amount of less than a liter or one bamboo.'[2] This interpretation slightly differs from that of Bakar *et al.* (1985a), who argue that *arè* is a measure of rice of about two liters. Asyik (1987), similarly, claims that *arè* is a container that has a capacity of 2 liters.

Differences also arise in determining the definition of classifiers. E.g., Durie (1985) states that *mayam* (or *manyam*) 'about three grams' is categorized as the weight measurement unit without mentioning it for specific purposes. Meanwhile, Asyik (1987) argues that *mayam* is used only to measure the weight of gold and silver. Later on, Daud and Durie (1999) interpret that the use of *mayam* was specifically to measure the weight of gold. Regarding the weight, Durie (1985) and Asyik (1987) have

[2] In this paper, we used the latest and updated Acehnese orthography as proposed by Pillai and Yusuf (2012), Yusuf (2013), and Yusuf and Pillai (2013).

slightly different interpretations. Durie (1985) claims that one *mayam* weighs about three grams. Meanwhile, Asyik (1987) claims that one *mayam* weighs exactly three and a third grams.

While *arè* and *mayam* are a source of disagreement, Bakar *et al.* (1985a), Durie (1985), Asyik (1987), and Daud and Durie (1999) agree that *hah* is 'the length equivalent to an ell or elbow to the tip of the middle finger.' Likewise, *deupa* is claimed to be 'the length equivalent to a fathom or a height of a man.' Both *hah* and *deupa* use human arms as media to measure. This measurement system is different from the standard system that has been used in other areas of the world so far. This measurement system is known as a mensural classifier (Aikhenvald 2000).

To the best of our knowledge, there have not been many comprehensive studies on the classifiers of the Acehnese language. Azwardi (2014) has conducted a study on the Acehnese language based on the North Aceh dialect, and he found that there are at least 79 numeral classifiers used by the community. His data comprise the classifiers from five different points of view, namely the lexical, grammatical, semantic, sociolinguistic, and psycholinguistic points of view. Unfortunately, he does not explain the types of classifiers. But out of the 79 classifiers, he mentions several mensural classifiers, namely *arè, atôt, jingkai, hah, deupa, mok,* and *mayam.* The mensural classifiers can be found more clearly in Durie's (1985) work, which uses the term "measure nouns" and divides them into 10 categories of measurement units.

This present study investigates in more detail and more comprehensively the Acehnese mensural classifiers. The focus of this research is on mensural classifiers that use traditional measuring tools as measurement media. It is different from the previous studies on similar topics, and it also raises new topics that have not been discussed before in the literature. This study uses Aikhenvald's (2000) typology of noun categorization device. Moreover, traditional measuring tools are also parts of craft and commerce that reflect cultures and places, promoting the tradition that is handed down from generation to generation (Leon *et al.* 2020). Therefore, it is important to study these traditional Acehnese mensural classifiers.

The mensural classifiers examined in this study are those used by the Acehnese community in Pidie Jaya District, Aceh Province, Indonesia. We chose Pidie Jaya District because three of the four authors came from this district. Preservation of the Acehnese language is also a focus of this research, considering that the younger generation of Acehnese prefers to communicate using Bahasa Indonesia (Aziz *et al.* 2020, Aziz *et al.* 2021) because it sounds more prestigious (Al-Auwal 2017). The same reason was asserted by parents who chose to teach Bahasa Indonesia as the first language to their children (Alamsyah 2011; Yusuf *et al.* 2022b). The results of this study act as a documentation to help preserve a minority language to continue to thrive in a community.

2. Acehnese numeral mensural classifiers

Durie (1985) explains that there are eight categories of measurement in the Acehnese language. These include numbers, volumes, shapes, areas, parts or sections, extents of time, some obsolete money terms, and terms for kinds. Referring to Aikhenvald's typology (2000), there are two out of seven categories that fall into the mensural classifier. In the volume category, there are a few mensural classifiers that have become a standard for measuring volumes. Unfortunately, Durie (1985) does not explain the capacity of *arè* if converted to the standard unit of measurements. Smaller sizes are *cupak,* which means 'half *arè*,' *kay* 'a quarter of *arè*,' and *beulakay* 'one-eighth of *arè*.' Meanwhile, for sizes larger than *arè, arè gantang* means 'two *arè*,' *naléh* is '16 *arè*,' *gunca* '160 *are*' and *kuyan* '1600 *arè*.' The traditional measuring tool used was not explained. Still, Durie (1985) states that *kay* has the same size as the volume of half of the coconut shell. All measurements above are based on the Acehnese local tradition. In addition, in the area category, there is a *yôk* 'a measure of rice field area' which also uses measurement procedures based on local traditions.

There is also a volume category that uses part of the human body as a measurement medium. These measurements include *ceukue*, meaning 'an open handful,' *geutu* 'a pinch between thumb and index finger,' *jeumpet* 'a pinch with the tips of the first three fingers,' *paleut* 'an open handful,' *pangkee* 'an armful,' and *reugam* 'a fistful.' For the shape category, there is *geupay* 'a lump.' *Geupay* also uses part of the human body as a measurement medium, namely the fist (Durie 1985).

Referring to the Acehnese-Bahasa Indonesia Dictionary (Bakar *et al.* 1985a; Bakar *et al.* 1985b) there are several other measurement terms besides those discussed earlier. Some of them are used only to measure certain objects. Examples are *ci* (Bakar *et al.* 1985a) and *tahe* (Bakar *et al.* 1985b), both of which have the meaning 'a measure for weighing opium.' There is no further explanation of the size of *ci* and *tahe* if converted to standard measurements. There is also *diwa* used specifically for *keumamah* 'fish which is boiled then floured to make it dry and durable' (Bakar *et al.* 1985a). The size of the weight of the *diwa* is also not known for sure if it is converted to standard measurements.

To measure the areca nut, the mensural classifier *lasah* is used (Bakar *et al.* 1985a). To measure the number of strands of silk thread, a mensural classifier *tu* is used. The mensural classifier for measuring metal alloys is called *subok* (Bakar *et al.* 1985b). Just like mensural classifiers *ci, tahe,* and *diwa,* there are no explanations of how much weight of *lasah, tu,* and *subok* if converted to a standard unit of measurement.

3. Methods

The method of this research is qualitative, more precisely, ethnographic. The research was carried out in Pidie Jaya District, Aceh, Indonesia. In collecting data, there were twelve informants: two informants came from Bandar Baru Sub-district, three informants came from Panteraja Sub-district, one informant came from Trienggadeng Sub-district, four informants came from the Meureudu sub-district, and two informants came from Meurah Dua Sub-district. The informants recruited as samples were "based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (Tisdell and Merriam 2009: 77). We sampled community members who mostly used the Acehnese language as a daily communication language. The dialect used is either the Pidie dialect or the North Aceh dialect because according to Asyik (1987), the Acehnese community in some areas in Pidie Jaya District tends to use both dialects. The informants chosen were also over 40 years old, taking into account the results of the research by Alamsyah *et al.* (2011), Al-Auwal (2017), Aziz *et al.* (2020), and Aziz *et al.* (2021) claiming that the younger generation of Acehnese is more fluent in Bahasa Indonesia than the Acehnese language.

Two types of data collection are used in this research: non-participant observation and elicitation. We did the non-participant observation since two of the three authors came from this district. The instrument we used was an observation sheet that consisted of two parts. Part A is the informant's data, such as name, age, domicile area, and occupation. Part B is a table consisting of five columns. The first column is the numbering column, the second column contains the name of the mensural classifiers that are known by the informants (as the result of the elicitation), the third column contains the name of the tool used in measuring, and the fourth column is information on the use of the mensural classifier. The fourth column consists of two sub-columns, namely "yes" and "no" columns. The last column contains additional information about the classifier.

We also used an elicitation technique in collecting the data since we found out that the informants had difficulty answering the asked questions, especially in recalling the names of some mensural classifiers as well as the traditional measuring tools. Johnson and Weller (2002: 492) explained that "elicitation methods are especially critical for the elicitation of unarticulated personal experience, in this case, forms of the expert knowledge that are often tacit and difficult to obtain through normal interviews or from simple descriptive discourse." We decided to first conduct preliminary research on the mensural classifiers used by the Acehnese community. The target community originally came from Pidie Jaya District but is now settled in Banda Aceh. Considering that Banda Aceh is populated by many kinds of communities from other districts, where someone can speak the Acehnese language in more than one dialect, even all four dialects at once. The purpose of this preliminary research is to gather

information about the kinds of mensural classifiers as the initial data as much as possible. This gathered information then was utilized as the second research instrument: an elicitation sheet.

In analyzing the data, we first combined the results of the two techniques of data collection, namely non-participant observation and elicitation. Once combined, the next step is to analyze the data. We chose the three stages of data analysis suggested by Miles *et al.* (2014). Those three stages are data condensation, data display, and conclusion drawing. In the first stage, the raw data were selected based on the focus of this research. The purpose of data condensation was to take the necessary data and discard unnecessary ones. The selected data were then grouped according to certain categories. In the second stage, the data that had been grouped were then displayed accordingly to later make it easier to describe them. The data display was made in tabular forms and divided into categories that had been briefly discussed in data condensation. The purpose of this was to provide a comprehensive image of the mensural classifiers as well as the traditional measuring tools to see the correlation between one datum and another. The last stage was looking for correlations among the data. The results of these correlations were concluded and discussed in a narrative form. For each discussion of the mensural classifier, it was discussed based on these categories: the type of measurement unit, the kind of traditional measuring tools, and whether they are still used or not. In addition, the usability, the examples of usage, and other matters relating to each classifier (e.g., the story behind and the origin of the classifier) are also discussed.

4. Results and discussion

The results of the data analysis found that there were 27 mensural classifiers used by the Acehnese community in Pidie Jaya District which is divided into three measurement unit categories. For volume measurement units, there are 23 mensural classifiers: *kai, sukèe, ndhie, siblakai, cupak, arè, gantang, pacôk, kulah, naléh, gunca, kuyan, tayeun, gaca siarè, gaca sicupak, gaca sikai, glok, cawan, mok, cinu, tima*, *yôk,* and *kalè.* We found only one mensural classifier for the width measurement unit, namely *naléh.* Three other mensural classifiers, *manyam, bungkai,* and *katoe* are included in the weight measurement unit.

4.1. Volume measurement units

For volume measurement units, there are 23 mensural classifiers: *kai, sukèe, ndhie, siblakai, cupak, arè, gantang, pacôk, kulah, naléh, gunca, kuyan, tayeun, gaca siarè, gaca sicupak, gaca sikai, glok, cawan, mok, cinu, tima*, *yôk,* and *kalè.* They are explained in the next sub-sections.

4.1.1. *Kai*

Kai is a mensural classifier for the volume measurement unit which is usually used for measuring rice, beans, and seeds. It uses *bruek kai* as a traditional measuring tool (Figure 1.). According to Daud and Durie (1999), *bruek* means 'coconut shell' because this measuring tool is indeed made of a coconut shell whose surface is smoothed. The coconut shell is cut at the bottom for about one-third part of its original size so that the upper two-thirds parts are used. On the top of the coconut shell, there are naturally formed holes. The Acehnese community in Pidie Jaya District used these holes to get a hold of the shell by inserting the middle finger into one of the holes.

Figure 1. The measuring tool *bruek kai* is made from coconut shells (photos by Dini Hanifa)

4.1.2. *Sukèe, Ndhie, Siblakai* and *Cupak*

Mensural classifiers *sukèe, ndhie, siblakai,* and *cupak* also use *bruek kai* as a measuring tool. *Sukèe* has a size of about one-eighth of *kai*. *Ndhie* has a size which is a quarter of *kai* or equivalent to two *sukèe*. *Siblakai* is half of the size of mensural classifier *kai*, while *cupak* is equivalent to two *kai*. Table 1. shows the size comparison of mensural classifier *sukèe, ndhie, siblakai,* and *cupak* to mensural classifier *kai.*

	Sukèe	*Ndhie*	*Siblakai*	*Kai*	*Cupak*
Sukèe	1	2	4	8	16
Ndhie	½	1	2	4	8
Siblakai	¼	½	1	2	4
Kai	1/8	¼	½	1	2
Cupak	1/16	1/8	¼	½	1

Table 1. Size comparison of *sukèe, ndhie, siblakai,* and *cupak* to *kai*

Even though *ndhie* has a size that is equivalent to two *sukèe*, the informants agreed that if they wanted to say *ndhie*, they never say it as *dua sukèe* 'two *sukèe*.' This rule is also applied to *siblakai* (not *dua ndhie* 'two *ndhie*,' or *peut sukèe* 'four *sukèe*), *kai* (not *dua siblakai* 'two *siblakai*,' or *peut ndhie* 'four *ndhie*,' or *lapan sukèe* 'eight *sukèe*') and *cupak* (not *dua kai* 'two *kai*,' or *peut siblakai* 'four *siblakai*,' or *lapan ndhie* 'eight *ndhie*,' or *namblah sukèe* 'sixteen *sukèe*').

4.1.3. *Arè* and *Gantang*

The mensural classifier *arè* is used mostly to measure rice. According to the informants, one *arè* of rice has a volume of around two liters (2 L). *Gantang* is a mensural classifier that has a size equivalent to two *arè* or approximately 4 L. It also is used to measure rice. The informants believe that members of the Acehnese community in Pidie Jaya District now more often say *dua arè* 'two *arè*' than *si-gantang* 'one *gantang*.' Likewise, it's more common to say *lhèe arè* 'three *arè*' (not 'one and a half gantang'), *peut arè* 'four *arè*' (not 'two *gantang*'), and so on.

To measure *arè* and *gantang*, a traditional measuring tool made of *trieng* 'bamboo' is used. The bamboo that is used as a measuring tool for *arè* is cut as big as one bamboo reed (Figure 2.). This traditional measuring tool is called *arè* (not to be confused with the mensural classifier *are*).

Nowadays, there is an *arè* made of tin that has a standardized size of 2 L (Figure 3.). However, the Acehnese community in Pidie Jaya District still prefers to use the measuring tool *arè* that is made of *trieng* 'bamboo.' Some informants said that this phenomenon was just out of habit, while other informants claimed that if the traditional measuring tool *arè* made of bamboo is used to measure to-be-cooked rice, the taste of rice would be better when it was cooked.

Figure 2. Arè made from bamboo (photo by Dini Hanifa)

Figure 3. Arè made from tin (photo by Dini Hanifa)

4.1.4. *Pacôk*

The mensural classifier *pacôk* is used to measure *ie jôk* 'sap water' (obtained by tapping inflorescences of various palms). Like mensural classifier *arè, pacôk* also uses a traditional measuring tool made of *trieng* 'bamboo,' only the length is longer, about 1 m with a capacity of about 4 to 5 L. This is because the bamboo reeds are used as many as two or three reeds, and the middle part is perforated so that one reed and the other are interconnected. This measuring tool is called *pacôk trieng*.

We had to look for an online image of bamboo with the same function as *pacôk trieng* since we could not find *pacôk trieng* used by the Acehnese community in the Pidie Jaya District. We found out a *bumbung*, which is a bamboo container used to extract sap water. According to the informants, *bumbung* has the same characteristics as *pacôk trieng*.

Figure 4. Bumbung, which according to the informants resembles a *pacôk trieng* made from bamboo (http://bayurifaldhi.blogspot.com/2015/05/enau-arenga-pinnata.html)

4.1.5. *Kulah*

Kulah is another mensural classifier used for measuring water in the volume measurement unit. *Kulah* has another meaning aside from the mensural classifier: 'water tank' (Daud and Durie 1999). One *kulah* of water has a volume of about 135 liter. *Kulah* has no specific traditional measuring tool use. According to the informant, the Acehnese community in Pidie Jaya District made a special tub in which the capacity is equivalent to two *kulah* were used for the *wudhu'* (Islamic procedure for cleansing parts of the body, a type of ritual purification, or ablution) done before prayers are conducted. According to

their beliefs, the water in a tub which has a volume of fewer than two *kulah* cannot be used for ablution. *Kulah* is the mensural classifier that is still currently used in the daily life of the Acehnese community in the Pidie Jaya District.

Figure 5. A place for *kulah* used for ablution at Meunasah Kulah Batee, Bireuen, Aceh (https://www.ibnusyahri.com/2016/07/meunasah-kulah-batee-kesejukan-di.html

4.1.6. *Naléh, Gunca* and *Kuyan*

Mensural classifiers *naléh, gunca,* and *kuyan* are usually used for measuring rice, especially during the rice harvest season. One *naléh* is equal to 16 *arè* or eight *gantang* or 32 L. One *gunca* is equivalent to 10 *naléh* or 80 *gantang* or 320 L. Meanwhile, one *kuyan* is equivalent to 10 *gunca* or 100 *naléh* or 3200 L.

The traditional measuring tool used is *tông*, which is made of wood (Figure 6.). One *tông* is equivalent to one *naléh*. Despite having a very large capacity, the mensural classifier *kuyan* still uses the traditional measuring tool *tông* and there is no other traditional measuring tool specifically for it. We asked which kind of tree was used for making *tông* and the informants answered that any tree would do, as long as it was strong enough for the capacity of 32 L. Yet, some informants stated that the measuring tool *tông* they owned was made of wood from a jackfruit tree.

Figure 6. The measuring tool *tông* is made from wood (photo by Dini Hanifa)

Gaténg or *katéng* was once used before *tông* became popular as a measuring tool. It is a container used as a measure of content to measure rice for *jakeuet* (a form of almsgiving to the Muslim treated in Islam as a religious obligation). *Gaténg* is a basket made of the skin of bamboo reed. The bottom of the *gaténg* is rectangular-shape and has four legs, those legs are made of rattan. Since the 1990s, the Acehnese community in Pidie Jaya District prefers to use *tông* made of wood as the measuring tool rather than *gaténg. Gaténg* is no longer found in the Acehnese homes, but it can be found in The Museum of Aceh in Banda Aceh, the capital city of Aceh Province (see Figure 7.).

Figure 7. The measuring tool *gaténg or katéng* is made from brass (photo by Dini Hanifa)

Traditionally, rice is usually stored in a cylindrical rice storage container called *krông padé* (Daud and Durie 1999) made of the skin of bamboo reed (Figure 8.). It is about 1.5 meters in height and its diameter is about 2 meters. Inside of a *krông padé* there is a woven mat made of *pandan tikar* (*pandanus tectorius).* According to informants, if there is a house with a *krông padé* inside, then the owner of the house is regarded as a rich person. No matter the size of the house, big or small, if there is no *krông padé* inside it, then the owner of the house is regarded as a poor person.

Figure 8. The rice storage of *krông padé* (photo by Dini Hanifa)

4.1.7. *Tayeun*

Tayeun is the mensural classifier used to measure water. One *tayeun* has a capacity of about 8 to 10 L. The traditional measuring tool for mensural classifier *tayeun* has the same name, *tayeun*. It has a shape like a jar and is made of brass. It is considered to be a traditional measuring tool even though it comes from abroad. Some informants claimed that the measuring tool *tayeun* originally came from India, while other informants said that it originated from Saudi Arabia.

Figure 9. The measuring tool *tayeun* is made from brass (photo by Dini Hanifa)

4.1.8. *Gaca Siarè, Gaca Sicupak* and *Gaca Sikai*

The mensural classifiers *gaca siarè, gaca sicupak,* and *gaca sikai* are used for measuring liquids such as water and oil. *Gaca siarè* is so named because this mensural classifier has a capacity equivalent to the mensural classifier *arè*. Likewise, *gaca sicupak* and *gaca sikai,* have a capacity equivalent to the mensural classifier *cupak* and *kai*.

The traditional measuring tool used for each mensural classifier is different. The measuring tool used for mensural classifier *gaca siarè* 'one-*arè*-capacity bottle' was *gaca bieh* 'beer bottle' (Figure 10.) and informants claimed this is from the Netherlands citizens who had lived in Aceh Province for about three centuries. Even so, it is considered traditional by informants. Mensural classifiers *gaca sicupak* (Figure 11.) and *gaca sikai* (Figure 12.) use a measuring tool that has the same name as their mensural classifier. Both were also reported to have come from the Netherlands.

Figure 10. The measuring tool *gaca bieh* (photo by Dini Hanifa)

Figure 11. The measuring tool *gaca sicupak* (photo by Dini Hanifa)

Figure 12. The measuring tool *gaca sikai* (photo by Dini Hanifa)

4.1.9. *Glok* and *Cawan*

Glok and *cawan* are mensural classifiers with a capacity of about 250 mL as converted into a standard measurement unit. The traditional measuring tool for both *glok* (Figure 13.) and *cawan* (Figure 14.) has the same name as its mensural classifier. These traditional measuring tools are used for measuring ingredients for cakes and cookies.

Traditional measuring tools *glok* and *cawan* are made of enamel tin. Currently, there are *glok* and *cawan* made of tin can, glass, ceramics, plastic, and even melamine that are sold in the markets. At

present, *glok* and *cawan* made of enamel tin are difficult to find and have been replaced with those made of glass, tin plates, melamine, ceramics, or plastic. The informants agreed and argued that even though they were made in factories, *glok* and *cawan* made of enamel tin were still claimed to be traditional measuring tools and considered antiques, while those made of materials other than enamel tin and widely sold today are considered to be modern measuring tools.

Figure 13. The measuring tool *glok* is made from enamel tin (photo by Dini Hanifa)

Figure 14. The measuring tool *cawan* is made from a tin plate (photo by Dini Hanifa)

4.1.10. *Mok*

The mensural classifier *mok* is usually used in purchasing and selling transactions. It is used for measuring salt, flour, *asam sunti* 'dried salted *Averrhoa bilimbi,*' nuts and seeds. Particularly for Panteraja Sub-district, where most of the community members work in the fisheries, they use mensural classifier *mok* for dried and small-sized seafood.

The traditional measuring tool for mensural classifier *mok* is *plôk ni* (Figure 15.) which is an emptied and repurposed can of condensed milk. The informants believe that the measuring tool *plôk ni* is a traditional measuring tool because they have been using it for generations and will continue to use it because it is easy to make. In addition, they are also accustomed to and consider it as easier to use in trading than using standard scales.

Figure 15. The measuring tool *plôk ni* is made from condensed milk cans (photo by Dini Hanifa)

4.1.11. *Cinu*

The mensural classifier *cinu* has a traditional measuring tool with the same name. The mensural classifier *cinu* is normally used to measure water, while the measuring tool *cinu* is also used to dip the water other than as a measuring tool. *Cinu* has the true meaning 'water dipper' (Daud and Durie 1999).

The traditional measuring tool *cinu* is also made of *bruek* 'coconut shell' (Figure 16.). The difference is if the coconut shell used to make the measuring tool for mensural classifier *kai* is cut one-third from the top, then the coconut shell for mensural classifier *cinu* is cut a quarter from the bottom so that the naturally formed hole is also automatically disposed of. To prevent the hand from becoming wet from dipping into the water, the coconut shell is given a handle made of the coconut tree and resembles a stick.

Figure 16. The measuring tool *cinu* is made from coconut shells (photo by Dini Hanifa)

4.1.12. *Tima*

Tima is a mensural classifier used to measure water. The traditional measuring tool for *tima* is *tima situek*. *Tima situek* is made of *situek*'s (the areca tree) central vein of the leaf. *Situek* is made in such a way that it resembles a water bucket. Here is a picture of a *situek* (Figure 17.) and measuring tool *tima* made of *situek* (Figure 18.).

Figure 17. Situek is made from an areca tree's central vein of the leaf (photo by Dini Hanifa)

Figure 18. The measuring tool *tima situek* is made from the areca tree's central vein of the leaf (photo by Dini Hanifa)

4.1.13. *Yôk*

Yôk means a pair, a count for several types of objects, such as stones or seeds (Bakar *et al.* 1985; Djajadiningrat 1934). That is, one count equals two seeds. Therefore, if there is five *yôk*, it means the number of stones or seeds is 10, and so on. Figure 19. shows an example of *aneuk cato*, in which the pieces of the *cato* are from the seeds known as the *geutue* fruit by the Acehnese.

Figure 19. Aneuk cato from the seeds known as the *geutue* fruit among the Acehnese (photos by Mohammad Harun)

4.1.14. *Kalè*

Kalè is a pair count of four that is usually used to count seeds or small objects that can be seized in large quantities and easily separated, such as peanuts, *melinjo* (*Gnetum gnemon)* seeds, and *langsat* (*Lansium parasiticum)* fruit, and the like. Therefore, one *kalè* equals four seeds or small fruits. *Kalè* is a continuation of pair counts from *yôk*; one *kalè* equals two *yôk*; two *kalè* equals four *yôk*, and so on.

4.2. Width measurement units

For the width measurement unit, we found only one mensural classifier, namely *naléh*, a width measurement unit used to measure the area of rice fields and other areas. To measure the area of a rice field, the Aceh community in Pidie Jaya District uses the same name as one of the mensural classifiers for the volume measurement unit, namely *naléh*. This happens because the measurement of rice fields is adjusted to the number of rice seeds to be sown in the area.

In the previous discussion, it was stated that the mensural classifier *naléh* is part of a volume measurement unit that has a capacity of approximately 32 L. If one *naléh* of rice seedlings is distributed and covers a rice field area of 2300 m^2, then the rice field is claimed to have an area of one *naléh* width. Even though it has an uncertain size, the informants agreed that one *naléh* of rice field area has a size of 2000 m^2 to 2500 m^2. Meanwhile, if the mensural classifier *naléh* is used to measure the area other than the rice field, then one *naléh* is considered equal to 2500 m^2.

4.3. Weight measurement units

For the weight measurement unit, there are *manyam, bungkai*, and *katoe*.

4.3.1. *Manyam*

According to the informants, the mensural classifier *manyam* was only used to measure gold. One *manyam* of gold weighs 3.3 grams. The traditional measuring tool used is *céng meuh* 'gold scales' (Figure 20.). The informants claimed that they did not know where this measuring tool came from, but they agreed that this measuring tool did not originate from Pidie Jaya District or even the Aceh Province. Measuring tool *céng meuh* has been replaced with a digital gold scale that is considered easier and gives more accurate measuring results. However, the informants claim that this digital scale is also called *céng meuh* (Figure 21.) by the Acehnese community in Pidie Jaya District, but they argue that this digital *céng meuh* is a modern, non-traditional measuring tool.

Figure 20. The traditional measuring tool *céng meuh* (photo by Dini Hanifa)

Figure 21. The modern measuring tool *céng meuh* (photo by Dini Hanifa)

4.3.2. *Bungkai*

Just like *manyam*, the mensural classifier *bungkai* is used specifically to measure the weight of gold and is currently used. The only difference is that the mensural classifier *bungkai* is heavier than the mensural classifier *manyam*. One *bungkai* is equivalent to 16 *manyam*. The traditional measuring tool used is also the same as the mensural classifier *manyam*, which is *céng meuh*. Figure 22. shows an engagement or wedding ring of an Acehnese woman, which weighs two *manyam*. A typical weight for

a ring for marriage is about one or two *manyam*, depending on the arrangement between the bride's and the groom's families. Meanwhile, the dowry for marriage is valued from five to fifty *manyam*; this also depends on the arrangement between the bride's and the groom's families. Figure 23. shows a dowry with a value of 16 *manyam*, which is equivalent to one *bungkai.*

Figure 22. A two *manyam* Acehnese wedding ring (photo by Dini Hanifa)

Figure 23. A 16 *manyam* Acehnese dowry or one *bungkai* (photo by Dini Hanifa)

4.3.3. *Katoe*

Katoe is a mensural classifier that weighs around 0.6 kg. The informant described the weight of the *katoe* with *seuteungöh kilo leubèh bacut* 'a little bit more than half a kilo.' According to the informant, the mensural classifier *katoe* is used to measure the weight of food. The traditional measuring tool used is the *céng katoe* 'scales for *katoe.*' One *céng katoe* can measure weight up to five *katoe*.

In the same case as the traditional measuring tool *pacôk trieng*, we could not find the measuring tool *céng katoe* and decided to search its image online. With the help of some informants, the researcher discovered the *céng katoe* image which has a similar characteristic to what the informants were described (Figure 24.).

Figure 24. Measuring tool *céng katoe*
(http://www.barangtempodoeloe.com/2013/11/timbangan-kati-mini-2.html)

5. Conclusion

The mensural classifiers used by the Acehnese community in Pidie Jaya District are divided into three categories: volume measurement unit, width measurement unit, and weight measurement unit. There are 23 mensural classifiers for the volume measurement unit (*kai, sukèe, ndhie, siblakai, cupak, arè, gantang, pacôk, kulah, naléh, gunca, kuyan, tayeun, gaca siarè, gaca sicupak, gaca sikai, glok, cawan, mok, cinu, tima*, *yôk,* and *kalè),* one mensural classifier for width measurement unit (*naléh*) and three mensural classifiers for weight measurement unit (*manyam, bungkai,* and *katoe*). The Acehnese utilizes parts of plants found in the vicinity to make their traditional measuring tools. These parts are bamboo, cane, and coconut shells, among others. Measuring tools are known to ease life because they offer the services of quality, monitoring, safety, design, assembly, and problem-solving.

By understanding the traditional measuring tools of society, researchers can improve their understanding of how certain societies quantify the world around them, and how they employ measurement to improve the quality and validity of science and lifestyle. The history and development of society can also be revealed through the study of these traditional measuring tools. Even though this paper has discussed the traditional measuring tools of the Acehnese, measurements using parts of the human body were not discussed. Therefore, future research is recommended to investigate this area.

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