

Tracing the bongkel: bamboo music of rural farmers in Banyumas, Central Java, Indonesia



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ABSTRACT

Bongkel is the music of a farming community that developed in Gerduren Village, Purwajati, Banyumas, Central Java. This music only uses a four-tone *slendro* tuning. The current condition is that it is very difficult to find *bongkel* players; if there is no tracking of information about the history of *bongkel*, then in the future, it will be very difficult to find important information about *bongkel*. The purpose of this research is to trace and document the *bongkel*, from the side of its early history to its musicological review. The research method used is observation and interviews to explore oral sources. The use of oral sources is done because, until now have never received written data that specifically discusses bamboo music, especially in the Banyumas language. The interview focused on Kasmudi, Ibu Kunes, Maryadi Kresek and several other informants who were selected as sources, especially Kasmudi (a *bongkel* player) because he was the perpetrator the main witness. Kasmudi is the fourth generation of his entire family, which is a *bongkel* player on average. There are three types of data analyzed, including the history of the appearance of the *bongkel*, organology data, and musicological data. The grouping of data is done based on the three types of data, and the analysis is done by referring to the grouping of the three types of data. The results of this study found that the strongest characteristic of *bongkel* music is the *imbal* technique; besides that, *bongkel* is one of the musical instruments that became the forerunner to the development of *angklung buncis*, *krumpyung*, and *calung* music. The contribution of this research provides important information for the interest of Banyumas musical studies, especially for the development of bamboo music.



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1. Introduction

Bongkel is a genre of folk music found in Gerduren Village, Purwajati, Banyumas. This music is supported by a percussion instrument, a kind of bamboo *angklung*, using a pentatonic tone, namely a five-tone *slendro* like the Javanese gamelan [1]. However, in reality, the *bongkel* only uses a four-tone *slendro*. This is due to the technical difficulty of the performance. The *bongkel* instrument has four different tones, both physical and high and low, and the tubes are organized in a row, similar to bamboo *angklung*'s tone tubes [2]. The *bongkel* is swung and vibrated. The method is known as *dekorog* in Banyumas terminology; the play is done by using both hands and fingers to actively close or stop unwanted tones from sounding so that sounds are loose notes (not closed). The four tubes will alternately sound to create a song with such a playing method. Even though there are conventional play rules, they are not absolute since two to three tones frequently sound together in specific *gending* presentations, regardless of the sort of *gending*. For example, one tone serves as a *gending* structure (*balungan*) that plays on specific beats consistently, while another tone occurs on the sides of a melody spoken by a type of *balungan* [3]–[6]. *Imbal* play techniques, such as the play of *bonang barung* and

bonang penerus in Javanese gamelan, will be created by combining the two [7]–[9]. It is complicated to define Banyumas bamboo music's beginnings fully, particularly the *bongkel*, which is the subject of this study, given that correct data sources do not support folk art forms in general. However, this study agrees with Jaap Kunst that the existence of Banyumas bamboo music in the early stages until it reached its current form most likely started from a relatively simple form [10]. This is based on the notion of change evolution, which states that in the process of changing to a new environment, anything evolves continually, routinely, and steadily [11]–[13]. This study, based on this notion, attempts to track the presence of *bongkel* in Banyumas, with the majority of data gathered through *gotek* or word of mouth.

Bamboo music may be found around the Nusantara (archipelago), not just at Banyumas. When Jaap Kunst gathered the information for his well-known book *Music in Java*, he wrote that bamboo music was prevalent in Java, Bali, Sumatra, and Kalimantan [14]. In Bali, it is known as *jegog bung, gerantang, gamelan pegambuhan*, and so on, [15]; in East Java, we also know *angklung caruk, thuk-thuk*; in West Java, we know various types of bamboo music, including *calung jinjing, calung renteng, dodog lojor*, and also *angklung* instruments, both diatonic and pentatonic [16]. While in Central Java, in the Kulon Progo area, there is also a bamboo *gamelan* instrument called *krumpyung*. When it comes to the language used to name each sort of instrument, it turns out that the words are incredibly varied and correspond to each ethnic group's dialect inclinations. Each variety of bamboo music has its characteristics, such as historical backgrounds, organological notions, musical concepts, and the location of the supporting community's life. Similarly, Banyumas bamboo music, which exists in this situation, has its notions based on the culture of the supporting community. It is no exaggeration if people often think that art is a part of their life. In the play of *bongkel* music, the *imbal* technique is a powerful musical characteristic that is owned, and such playing techniques are unique, rare [17]. In its development, the characteristics of the play of *bongkel* are considered meaningful, impressive and deserve to be studied more deeply because *bongkel* is believed to be the oldest bamboo music in Banyumas and has become the forerunner of *angklung buncis, krumpyung*, and *calung*. *Bongkel* is deemed necessary to be traced through in-depth research; the aim is that the attractiveness contained in it can be documented. The contribution of this research is to provide scientific information related to the developmental model of *bongkel* music so that the results can be used by conservation schools such as the musical department of the Vocational High School for the traditional music in Banyumas, as well as beneficial for bamboo music researchers at various universities in Indonesia.

2. Method

The majority of the data used in this study came from two sources: oral sources and written sources. However, because no one has ever written the *bongkel*, written sources are difficult to come by. Oral sources were used to maintain receiving the information needed. Oral sources are primary sources that may be utilised as historical witnesses since they are near to the events [18]–[22]. According to the statement above, the author immediately questioned the principal performer, Ki Kasmudi (89 years old), the sole *bongkel* artist in Banyumas, in order to acquire the data needed for this study. He is the fourth generation of a *bongkel* musical instrument artisan family, according to his confession. In addition to Kasmudi, interviews were held with two siblings, Nyi Risah (83 years) and Ki Naroji (71 years), to obtain the precise information and use it as a comparison to information gained from primary sources. Furthermore, the researchers looked for other sources outside the Kasmudi family environment to supplement the data obtained from the main source as comparison data: Ki Maryadi Kresek (82 years), one of the *lengger angklung* figures from Kecitran Village, Purworejo Klampok District, Banjarnegara Regency. This informant is not only a *lengger* and *pengrawit* figure, but he also knows how to make bamboo music. Nyi Kunes (90 years old), a former *calung lengger*, may be described as a character who is acknowledged as an important figure in the *lengger* in Banyumas because of his competence in the field of *lengger*. In Gerduren Village, Purwajati District, Banyumas, Ki Namiarja (68 years) is a *lengger* dancer and bamboo music maker. Suhardi (53 years), Head of the Ministry of Education and Culture Section, Banyumas Regency, and Tun Tamat (54 years), Cultural Inspector of Purwajati Sub-district Banyumas. The material from the interviews is then supplemented with written data to link the occurrences together to identify the difficulties clearly. Manuscripts and articles linked to this subject are examples of written sources. Written data is necessary in this case to inform or complement the interviewees' viewpoints. It also assists with the necessary research approach. Both of these sources are intended to be complimentary.

3. Results and Discussion

3.1. Bongkel and Origins

The author was unable to determine what the Indonesian word *bongkel* implies etymologically. However, suppose the word is seen using Javanese terminology (Javanese etymology), which is familiarly called *kerata basa* or *jarwa dhosok* [23]. In that case, the word *bongkel* is a combination of two words, namely *bong* and *kel*. *Bong* or *ngebong* in Indonesian means sleep, and the plural word *kel* becomes *kel-kel*, in this case, what is meant is the sound of the bamboo sounding instrument produced by the *panja*, namely the tool for making holes in the soil to be planted with crops such as corn, gaga rice, soybean peanut and so on. This type of agricultural tool, which can also produce unintentional music, is usually not only used as a means of entertainment during leisure time after working in the fields but can also be used as a tool to repel animals that will damage crops. Based on the *gotek* (word of mouth), this *panja* sounding instrument inspired the birth of the *bongkel* instrument before it reached its present form; originally, the idea of its creation was inspired by the sounding instrument, especially *panja*. *Panja* is agricultural equipment made of a piece of wood and serves to make holes in the ground where crops are sown, such as corn, gaga rice, types of beans and so on. Based on the narrative of Kasmudi (a *bongkel* artist) and several other sources, it is said that Gerduren Village, which is believed to be the birthplace of *lengger* which the Guwa Sumur legitimizes with Mbah Garut Kartinem, is still rarely inhabited, and local residents have not fully utilized the hilly land as land. Agriculture because most of it is still overgrown with weeds. So it is not surprising that the Gerduren area eventually became a nesting place for various types of wild animals such as tigers, deer, monkeys, wild boars, partridges, and other types of birds. These types of animals are generally considered the main enemies of farmers because they often damage people's crops. To prevent the plants from being disturbed by the animals above, various types of bamboo sounds are made to repel them. The instrument sounds in question include *kentongan*, *blandring*, *sorok*, *panja*, *bandhul* and finally, the *bongkel*. In addition, both during the day and night, the plants must be guarded, and they live around the plantation by building houses made of bamboo/wood called *gubug* or *panggok*. Such temporary residences are inhabited from the time of planting, weeding (caring for plants), harvesting time until when they start cultivating the soil again to prepare for the next planting season. This was done because the distance between where the farmers live and their gardening location is quite far, at least 10 kilometres.

While waiting for the plant, sound tools, including *bongkel*, are needed individually or in groups. The strains of tones that come from this bamboo sounding instrument can add to the lively atmosphere, especially on quiet nights. This event took place from before sunset until the morning. Almost every waking day (*ngebong*) the farmers do not stop sounding various kinds of sounds, with the aim of not only being entertainment (entertaining themselves), but also while driving away animals, and at the same time functioning as a means of communication that someone is waiting in their fields so that people who are about to do evil, for example stealing or destroying plants, do not dare to do so. Starting from the terms *ngebong* (sleeping) and *kel-kel* (which means the sound of a bamboo instrument), finally, these two terms are used to name the bamboo instrument commonly played by farmers, namely the *bongkel*. From various indications regarding the origins of the art of *bongkel* until now, it is not so clear because the available data is very scarce, and if there is, it is only in the form of *gotek*. Such data still require critical interpretation, and other data are needed as comparison materials that have some relevance. The absence of a reference that specifically discusses the *bongkel* is indeed very difficult for researchers. However, this is understandable because the type of folk art in general lives in an oral tradition, so it is natural that it is rare to find written evidence in the form of books (writings) that can provide a definite picture of the origin of the *bongkel*, since when did it start to exist, describes its growth and development from time to time and describes the changes that occur in it. However, it can be presumed that Banyumas bamboo music, including *bongkel*, existed in the early stages until it reached its present form, starting from a simple form. This view refers to the law of development or the law of evolution that something develops continuously, regularly and surely, in the process of adapting to a particular environment. What Mantle Hood (1980-1988) states about the development of Javanese gamelan from its fundamental form to its present-day complex and stable form appears to apply to Banyumas bamboo music, which can still be traced back to its beginnings [24]. The sounds of *panja* served as the embryo of *bongkel* music, which was subsequently passed down to the following generation, namely *bandhul*, according to the tales of the selected informants. A *panja* is a large piece of wood that is around 1.25 to 1.5 meters long and 6 cm in diameter, or as needed. A

spearhead-like point is formed at one end of the log (bottom), and this section is used to cut a hole in the ground for planting seeds. There are two varieties of *panja* that are regularly utilized for farming tasks in the Gerduren village. First, there is the regular *panja* (*bumbung*), which does not have a tone tube, and then there is the tone tube-equipped *panja*. The second type of *panja*, which uses a bamboo tone tube as a sound source and is divided into two types: *panja* with a tone tube at the top and *panja* with a tone tube connected to the bottom, is the subject of this research.

The first type, the tone tube (ridge) which is used as a sound source, is approximately one segment long, and the ridge is larger than the long rod. This is so that the *panja* rod can be inserted into the roof or vice versa the roof can cover the top of the *panja* rod. When the pole is plugged into the ground, the roof vibrates and makes a sound. Then the second type of length has a tube length of about 15-25 cm, and the diameter of the roof is usually smaller than the long rod. The roof's position is attached approximately 10-15 cm above the long eye. Installation of the roof by perforating the bottom of the *panja* as deep as half the size of the rod; this part serves as a seat or as a base for the roof (tone tube). The hole where the tone tube is usually larger than the roof size so that there are gaps as a reflection space. The inside of the roof is fitted with clamping slatss, while the outside of the roof is also furnished with straps in order to hold the roof or tone tube in place when subjected to vibrations. When the tool is operated and plugged into the ground, the bamboo tube on the *panja*'s bottom vibrates and makes a sound. Based on the hearing of the Banyumas people, these sounds seem to be *pating crengkel* (*kel-kel*), meaning that they are crowded and intertwined in the *panja* activities, which are usually carried out by a minimum of five to ten people. *Panja* can be seen in Figure 1.



Fig. 1. A tool for making a hole in the ground for sowing seeds in Banyumas is called *panja*

Today, *panja* are still widely owned and used by most of the people of Banyumas as agricultural equipment, and during the *palawija* planting season, these tools can be found in the corners of huts (*panggok*). This tool has a large following in the farming community (traditional farmers) because, in addition to being a tool for agricultural equipment, it also serves as a source of entertainment while working, as well as a means of communication or a signal that one of the community members is or will do the work of planting something (*muwur*). Such a phenomenon is in accordance with what Merriam said that vocal songs or folk songs convey the message contained in the text, while sounds (music) without text are able to communicate. For the Gerduren people, the sounds of *panja* are always related to farming activities. This can be observed when one member of the community has a job planting something that requires much energy, even though there is no notification (Javanese: *wara-wara*) before the spoiled or *muwur* activity takes place if there is a sound of *panja* chiming in one place (rice field/field), immediately they came to the location of the origin of the sound with the aim of providing energy assistance voluntarily while bringing equipment (*panja*) from their respective homes. It is not surprising that in this activity, there are a number of *panja* consisting of various types and sizes (some are large and some are small). As a result, the sound produced is very diverse.

The sounds that arise from spoiled activities seem to be arranged in such a way, and the falling of the *panja* to the ground is one after another and produces a rhythmic sound. Such a phenomenon is similar to a group of villagers who are pounding rice using a pestle and mortar. The rhythm produced by work activities or the sounds of a masher can also inflame the spirit of the work itself. The Group Diagram book states that the mash rod is one of the simplest and oldest rhythmic musical instruments. Like the sounds produced by *panja*, after going through somewhat perfect processing or rules, they can finally produce sounds that are quite interesting and can arouse work enthusiasm. In addition to evoking work ethic, the sounds are indeed needed to repel birds or grain-eating animals that have just been sown.

Starting from the pounding sounds of *panja* that finally inspired the local geniuses of Banyumas to create an instrument called *bandhul*, and its shape is similar to the bamboo *angklung* but only has two different tones. *Bandhul* is a kind of *kenthongan* play instrument made of bamboo. This tool consists of two bamboo tubes with a length of 1-2 segments; at the base of one segment is closed, and the other segment is open (uprooted) so that it is in the form of a tube. This tube is then shaped in such a way and adjusted the high and low tone or tuned as well as the tune or determine the tone on the instrument *angklung* or *calung*. Then after being tuned, the two tubes are assembled together on a bamboo stick at a certain distance so that it is easy to play how to play by hitting the left hand holding the instrument by hanging (Banyumas: *gandhul*) while the right-hand beats the instrument. Because of its hanging shape (Javanese: *gumandhul*), such an instrument is called a *bandhul*, and its shape is shown in Figure 2.



Fig. 2. *Bandhul* is a simple music tool that looks like a *kenthongan*

This simple-sounding tool by farmers is usually used for entertainment in their spare time while waiting for the plants in their fields to avoid animal disturbance. It was this *bandhul* instrument that, in subsequent developments, inspired the birth of another type of bamboo music which is now called *bongkel*. Look at Figure 3. In the beginning, it was mentioned that the art of *bongkel* is only supported by an instrument, meaning that no other instruments are included in its presentation. The performance is a mere musical presentation (without text).

Thus, *bongkel* is a type of Javanese performing art that only contains one aspect of art: music. This type of performing arts is very limited in number; there are only two types, namely *rindhing* and *macapat*, both of which contain only one aspect of music, namely vocals. Based on its physical form, broadly speaking, the *bongkel* instrument is divided into four parts; (1) tone resonance tube; (2) tone resonance pad; (3) *adeg-adeg*, and 4) hanger slats (*bilah gantungan*). This instrument has 4 (four) tone tubes (resonance holes) that differ in both the size of the resonance hole and the high and low of the tone, and the resonance holes are assembled into one so that the shape is as shown in Figure 3.



Fig. 3. Musical Instrument *Bongkel*

The lowest resonance hole is about 40 cm long. The diameter of the bamboo circumference is about 6 cm; on the other hand, the highest resonance hole is about 30 cm long and about 4 cm in diameter. Meanwhile, the shape and size of the two resonance holes in the middle usually correspond to the two resonance holes flanking them. The circuit distance between one resonant hole and another is about 15 to 20 cm. Then the resonance hole that serves as the base or bearing is about 60 cm long and 6 cm in diameter or slightly larger than the smallest roof size. Other parts such as scenes and hangers can be seen in Figure 4.

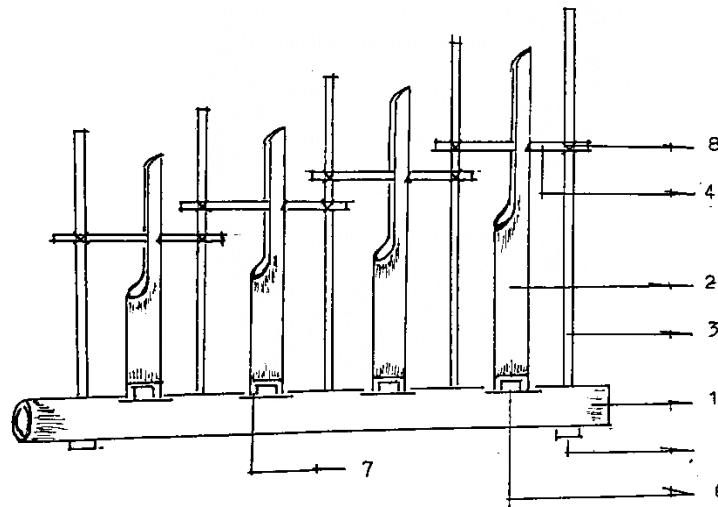


Fig. 4. *Bongkel* Instruments and their parts

The description of the Figure 4 is as follows, number 1 shows *bantal* (bearings), number 2 is the *bubungan* slats (*bilah bumbungan*), number 3 is *adeg-adeg*, number 4 is *gantangan*, number 5 shows *sikilan adeg-adeg*, number 6 is *kowekan*, number 7 is *sikilan bumbung*, and number 8 is the *tali* (rope bind). When be observed at a glance, the *bongkel* instrument is almost no different from the *angklung buncis* and *krumpyung*. Between these three types of bamboo music, it turns out that they have many similarities, both in the physical form of the instrument, the raw materials and the manufacturing process, as well as the tuning system. The difference lies in the number of resonant tones in one *rancak* (a complete instrument group), the tone area, playing techniques, drums and their functions.

3.2. Selection of Bamboo and Process of Making *Bongkel*

Bamboo is a type of plant that is familiar to the Indonesian people in general and the people of Banyumas in particular. It is cheap and easy to obtain and can be widely used in human life. It can be used as a building material, household furniture, weapon, communication tool, handicraft items, and an artistic tool, namely bamboo music. Thus, bamboo is an important source of raw material because

it is widely used for various purposes. As a building material for houses, bamboo is the main choice for villagers after wood and *glugu* (coconut tree trunks). The results of ethnobotanical research conducted by Yudodibroto, in detail, reveal the multipurpose of bamboo that we commonly see every day. In his publication report, he revealed that there are 18 types of bamboo in Indonesia [25]. Of the many types of bamboo, black bamboo (Javanese: *wulung*) is considered the best for instrument raw materials. This type of bamboo is thin-skinned and black in colour, has long segments, so it is very suitable for use as raw material for instruments such as *bongkel*, *angklung*, *krumpyung calung*, and so on. It has been explained above that the best bamboo for instrument raw materials is *wulung* bamboo. The process of making instruments usually goes through various stages, starting from selecting the bamboo, the time for felling, the preservation process until the bamboo is ready to be used as the raw material for the instrument. Bamboo as raw material for instruments should use selected bamboo with the following criteria: bamboo age at least three to five years; bamboo that is straight and has long segments; It is preferable to choose the bamboo that grows in the highlands so that the bamboo does not contain much water because such bamboo will affect the quality of the bamboo and its sound quality, for example, bamboo is easily weathered, and the sound is not loud (Javanese: *budeg*).

Having obtained bamboo with such characteristics, the next step is felling. In the Javanese tradition, the felling of bamboo both for use as raw material for instruments and for building materials is usually not carried out at any time but through a fairly long process and through careful calculations; for example, the time of felling always pays attention to the good season (Javanese: *mangsa*). Seasonal error in cutting bamboo, bamboo will be in vain in its use, which will not last four years [26]. In addition, according to the Javanese calendar, the cutting time is still adjusted to the market day (*Kliwon*, *Legi*, *Pain*, *Pon*, *Wage*). According to the belief of the Banyumas people, there are three categories of the most appropriate time for logging (Banyumas: *tor-tor* or *brubuh*) for both wood and bamboo, namely; (1) between December and February or on *mangsa kapitu* and *mangsa kesanga*; (2) in the rice planting season it will *mratak* or before the rainy season ends; and (3) must pay attention to the circulation of the moon (*rembulan*), that is, if the moon rises in the afternoon when logging is carried out in the morning, on the contrary, if the moon rises in the morning, logging is carried out in the afternoon. Based on the testimony of several informants who are also bamboo craftsmen, bamboo cutting carried out according to regulations is guaranteed not to be exposed to *bubuk* (powder), because according to their calculations (based on instinct), in the months as mentioned above, it can be ascertained that it is not *bubuk* (powder) season. Therefore, it is not surprising that such traditions are still valid in the Banyumas community in general or the Gerduren community in particular, and they do not dare to violate the rules that have been believed for generations.

After getting the selected bamboo and determining a good day for felling, the next step is felling. To get good quality bamboo, the branches are not immediately cleaned after the bamboo is cut down but are allowed to fall over against the felling site until the leaves fall off on their own. After that, the branches are removed and then placed leaning on shady trees for at least one to two months. One important thing to note in this process is that bamboo should not be exposed to direct sunlight because it will cause the bamboo to break easily. If this stage is passed, then the bamboo is cut into pieces according to the needs for the next preservation process. Broadly speaking, there are two ways of preserving bamboo, which bamboo craftsmen commonly use in Banyumas, namely; (1) by placing it above the hearth with a certain distance so that it is exposed to the heat of the smoke (Banyumas: *digarang*) and; (2) immersed (*dikum*) in water. These two methods of preserving bamboo require carefulness and patience to obtain quality bamboo, which has a good sound base and sounds loud (Banyumas: *kemlinthing*); bamboo is not easily broken and is not susceptible to *bubuk* (powdery) pests. In the process of preserving bamboo, the first method is pieces of bamboo that have been adjusted to the needs, for example, for *bongkel* or *angklung* raw materials, then placed on a fireplace (*pawon*). The bamboo pile and the fireplace are about two to three meters. This is so that the bamboo pile is not exposed to the heat of the fire directly, but what is needed in the heat of the fire generated from the puff of smoke that continuously hits the surface of the bamboo skin. This kind of drying process is carried out at least half a year to one year, and once a month, the position of the bamboo is changed or inverted so that the heat of the fire is evenly distributed.

The characteristic of bamboo that has been crushed is that the surface colour of the skin looks blackish and oily. To remove the dirt (*langes*) attached to the bamboo, it is enough to wipe (*dilap*) using a wet cloth to prevent the bamboo from breaking. As with the first preservation process, when the bamboo has been cleaned and then placed in a shady place (*diangin-anginkan/aerated*) to dry

(*kisat*) and when this stage is complete, the bamboo is ready to be used as a raw material for instruments. The second process is by being immersed in water, for example, in ditches or rivers with a water depth of approximately 50 cm. Getting good quality material takes a long soaking time, a minimum of five months to a year. The longer the soaking process is carried out, is believed that the quality of the bamboo produced is still good. If it is estimated that enough time has been soaked, then the bamboo is removed, and the dirt is cleaned, then the bamboo is placed in a shady (*teduh*) place or *diangin-angkinkan* (aerated) to dry. As a sign that the bamboo has dried and is ready to be used as a raw material for instruments, the outer skin of the bamboo looks yellowish white and is shiny as if it is oily.

3.3. Bongkel Making Process

The first step is to prepare the tools used in this manufacturing process, including *kudi*, *lading* (knife), slashing saw, hacksaw, and length gauge (ruler). For the manufacture of the *bongkel* instrument, it is necessary to prepare bamboo material consisting of four segments that are then cut into four parts. Each part is in the form of a tube (*bumbungan*). Before the tubes are formed, they are laid out in a row and sorted according to the size of the tubes and according to their needs. If the material has been arranged according to the required notes, the next step is to form the slats or make bamboo chips. Before starting the process of making slats, first take *babon* (*mal*) the standard tone of *gender* or *gambang*, by taking the middle 6 Tone (medium nem tone) as the basis (*pathokan*) in determining the next notes. The following is an example of the tone region found on the xylophone or *gender* instrument, and the tone typed in italics is the tone region used in *bongkel* tuning: [5 6 1 2 3 5 6 1 2 3 5 6 1 2 3]. For the tuning, the first step is to choose a material (*bakalan*) that matches the middle six notes, trying to find a tube that has a clear sound (*jernih*), by hitting the outer ring of the bamboo with a bat which is also made of bamboo/wood. On the part of the bamboo that sounds loudly, that is the place that will later be used as a *godhongan* (*bilahan*). Before *bakalan* to be sliced (*deponges*), it is also determined the location of the tube feet (Banyumas: *pagolan*), namely some of the *bilahan* that enter the bearing tube. The function of this foot when the *bongkel* is moved will hit next to the bearing hole (*tabung alas*).

The work of forming the legs is carried out carefully, and it has endeavoured that the location of the feet does not coincide with the bamboo eyes (*pokol*), which are usually found on each segment. These parts generally have irregular fibres, have to be careful in working and have patience. The formation of the legs on each tone tube must be carried out before making *godhongan* because if this work has not been completed, in the sense that it is not perfect, the results will affect the tone formation work (tuning). After the tube leg is doing work, the next job is the formation of *godhongan*. In this stage, the tube (*bakalan*), which is prepared for the middle six notes (medium), is divided into five parts. We divide these five parts into three parts, with the details: parts A and B are combined into one and function as a resonator tube when the bamboo is sliced. Meanwhile, sections C, D and E serve to form *godhongan* or harmonized parts. This middle six tone slats material saw right into the first two parts (A + B) to a depth of approximately 1/4 (quarter) of the tone tube circle. After that, the tube is sliced lengthwise (*de sesek*) with a knife so that this part is still left about half of the part. Thus, the *bakalan* material has been formed into 3 (three) parts: the *sikilan*, the *tumbengan* (resonator), and the *godhongan*. The former pieces, both saws and splits, are smoothed using a *lading* or knife by slicing (*menyeseke*) the angle of the sawn and smoothing both sides of the *godhongan* a slanted *kowekan* (*pingulan* shape) is formed. By removing the semicircle at the end of the *godhongan*, a semicircle is generated (*dipingul*), and this section is called *lambe*. With this stage's completion, boulder slats have been formed, prepared for the sixth note (*nem*). For the formation of the next tone slats, namely 2, 3, 5, the principle is the same as the process for making the six tone slats.

3.4. Bongkel Tuning System

After the material is formed into tubes, the next step is to tune or determine the tone. The way to determine the tone on which the barrel is based (*babonan*) is tone 6 (*nem*), as discussed in the previous text. The first step is to prepare the feeder tube for tone 6 of the four existing tubes. Hold the tube by the *godhongan* (*kepingan*) with your left hand and then hit the middle sixth slats on a *gender* or *gambang* instrument. Then the *bongkel* slats (*bumbung* section) is called and equated with the sixth note on the *gender* instrument or the *gambang* as the *babon* tone. The tuning method is as follows; if the tone is too high from the *babon* tone, then the step that needs to be done is to carefully thin the right and left *godhongan*. Furthermore, if the desired tone is still too low from the *babon* tone, then the inner bamboo meat of the *lambe* is sliced or shredded little by little until it reaches the desired

tone. If this method still does not work, then cut the end (*lambe*) little by little while occasionally matching the tone with the *babon* tube. Besides this, it must also be remembered that the compatibility with other tubes should not happen if the slats is too short or vice versa becomes too long. If these two methods have been taken but do not work, the tube must be replaced with another tube whose bamboo flesh is thinner than the previously unused material. If the tone is not clear, it may be caused by the resonator and *godhongan* not being right (Javanese: *nyupak*) or not according to the frequency, and it could also be that the resonator is too big or vice versa. If the *tumbengan* is too large, it can be overcome by reducing the length of the *tumbengan*, thus the length of the *godhongan* will increase. On the other hand, if the resonator tube is too small, to overcome this problem by thinning the inside of the resonator or by reducing the *godhongan* tone. This part can be identified by holding the *tumbengan* tightly and hitting the *godhongan*. It should be noted that in tuning the *bongkel* tube, the desired tone should not be too *pleng* or it may be slightly higher (*numpang*) than the *babon* tone. This is done so that the tone is not too low after the slats are given a hanging hole on the *godhongan*.

The next stage after the tuning is making the hanger hole. There are two ways to make this hole: First, by taking a quarter of the entire tube length. This method will look neat as a result but does not guarantee the clarity of the sound of the slats. Second, by holding the *godhongan* part with the thumb and index finger holding the slats while looking for the part that produces the loudest tone, this is where the right position is given a hole. The way to hold it from the bottom of the *godhongan* is to move it little by little up until it finds the intended place. When the location of the hole has been determined, it is marked, and then a hole is made with a special knife or with a hacksaw; the place is at the market place, and the hole is located on the outer shell of the *godhongan*. The direction of the saw is transverse, then the saw slats is 1 cm to 1.5 cm long, depending on the size of the bamboo. After making the hanger hole, it is necessary to re-examine the tone because the reduction in the *godhongan* part may change the tone, which can be lower. If this happens, it must reduce the end of the *godhongan* (*kepingan*).

3.5. The Rancangan of the Bongkel and its Parts

The *rancangan* of the *bongkel* is also made of bamboo and some soft rattan or wire as a fastener on the hanger. The plan consists of a tone tube, *adeg-adeg* and a hanger slats. In making the tone tube (tube base), our first step is to select a bamboo strand slightly larger than the tone tube (*bumbung*) from the lowest note, namely tone 6. It should be noted that the *bongkel* instrument is basically a two-handed technique of playing or playing 10 (ten fingers), so the distance between the *adeg-adeg* and the tone tube must be adjusted as well as possible so that it is easy to sound and turn off (close) the tone when it is sounded. Another part of the plan is the *adeg-adeg* and the hanger (*bilah gantungan*). There are two kinds of *adeg-adeg* shapes and hangers, namely round shapes and rectangular (flat) shapes. The round shape is used for *adeg-adeg* on the front and back edges, while the flat shape is used for the middle *adeg-adeg* of the hanger slats. For more details, see Figure 5. The descriptions of the Figure 5, are (a) *bantalan* tube; (b) tone slats holes (c) Round *adeg-adeg* holes; (d) Rectangular *adeg-adeg* holes; (e) *adeg-adeg*; (f) Hanging holes; (g) *Pagolan*; (h) Hanger slats.

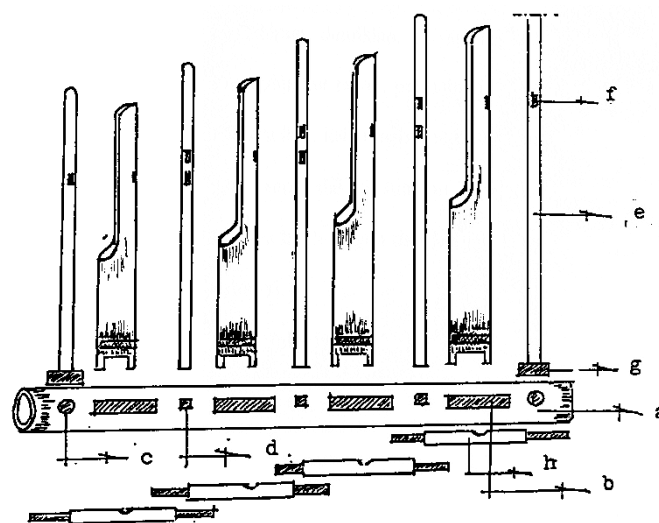


Fig. 5. *Bantalan*, *adeg-adeg* and *bilah gantungan*

3.6. Bongkel playing techniques

At first glance, the technique of playing *bongkel* does not seem much different from the technique of playing the *angklung*, which is both shaken and vibrated (Banyumas: *dekorog*). However, there are quite striking differences between the two types of instruments, especially regarding playing techniques. The differences are, among other things, if the *angklung* instrument is played using one hand without being followed by the cover of the fingers, while the *bongkel* is played using both hands and the fingers actively determine the desired tone to sound. For example, when sounding tone 6, the other three-tone tubes, 5, 2 and 3, must be squeezed (closed) so as not to vibrate because if the other three tubes vibrate, the desired tube sound, namely tube 6, the sound becomes unclear. (Javanese: *blero*). For this reason, as a basic guideline in playing *bongkel*, it is necessary to pay attention to the division of tasks between the two hands as follows; (1) The position of the left hand is in front of the right hand; (2) The middle finger, ring finger, little finger and thumb of the left hand hold the gallows (*adeg-adeg*); (3) The index finger of the left-hand squeezes the tone tube 3 (*lu*); (4) The base of the thumb of the left-hand squeezes tube 2 (*ro*); (5) The middle finger, ring finger and little finger of the right hand support the bearing (base tube); (6) The index finger of the right-hand squeezes the tone tube 5 (*mo*); (7) The base of the thumb of the right-hand squeezes tube 6 (*nem*). Table 1 is the position of the fingers in playing the *bongkel*.

Table 1. The position of the fingers in playing the *bongkel*

Sounding Tone	Released Tone	Squeezed Tone
3	3	2, 5, 6
2	2	3, 5, 6
5	5	3, 2, 6
6	6	5, 3, 2

To play the *bongkel* well is not easy; this requires special skills, including the ability to process the fingers of both hands and is supported by other elements such as mastery of rhythm and mastery of songs. Technically, playing this type of instrument is more difficult than playing the other two types of bamboo instruments, namely *angklung* and *calung*. In playing *bongkel*, must always be careful, especially in processing the fingers to determine the desired tone. This is done so that the notes do not vibrate with each other, which in turn will cause unwanted sounds. When this happens, the desired tone sounds unclear (*blero*). Thus, in general, in the play of *bongkel*, the four tubes will sound alternate in building a song or melody. To get a sound that flows or does not falter, it is better if every change of tone from one tube to another when it is sounding, do not rush to close it, but must use the next tube to sound so that it follows one after another (Javanese: *mbanyu mili*). It is still very difficult to determine the form of Banyumasan *gending* based on the performance of the *bongkel* instrument because to determine a form of *gending* at least a structural instrument is needed, namely an instrument whose playing can show the shape of the *gending*. For example, there are *ricikan kendang*, *kethuk/kenong*, *kempyang*, *kempul* and *gongs*. Meanwhile, in the *bongkel*, some of the *ricikan* are not owned because they are a single instrument in the sense that there are no other instruments included in it. One way to find out the shape of the *gending bongkel* is by referring to the same *gending* dish but served with a *gamelan gedhe* set. Only in this way can the shape of a *gending* be known because the *gamelan gedhe* has a colotomic instrument whose beat is fixed so that it will be easier to determine the shape of the *gending*. After it was known, the forms of Banyumasan *gending*, which were generally served using a bowl, turned out to be all in the form of fluency. The compositions of *balungan* in Banyumasan *gending* using *bongkel* as the medium consist of *balungan nibani*, *balungan pancer*, and *balungan mlaku*. Because most of Banyumasan's songs are in the form of *Lancaran*, in the following examples, many of them are taken from the *balungan gending* of *Lancaran*. It is hoped that this example can provide a little illustration and can represent the various compositions of *balungan gending bongkel* as a whole. The examples of the composition of the *balungan* in question are as follows:

a) . 2 . 5 . 2 . 5 . 2 . 5 . 2 . (6)

b) . 5 . 6 . 5 . 3 . 6 . 5 . 3 . (2)

Examples of *balungan pancer* compositions:

a) . 1 . 6 . 1 . 3 . 1 . 3 . 1 . (2)

b) . 6 . 3 . 6 . 5 . 6 . 3 . 6 . (2)

c) . 5 . 6 . 5 . 2 . 5 . 6 . 5 . (3)

The three examples above are *balungan pancer* 1 (*ji*), 6 (*nem*), and 5 (*ma*). The composition of *balungan pancer* is actually a composition of *balungan nibani* which in one *gongan* every second count is between *gatra* with the same tone with one another.

Examples of *balungan mlaku* compositions are:

a) . 3 5 2 . 3 5 2 . 3 5 2 5 6 5 (3)

b) . 6 3 5 3 6 1 2 . 6 3 5 3 6 5 (3)

c) 2 1 2 5 6 1 6 5 2 1 2 5 6 1 5 (6)

Basically, the understanding of rhythm in the presentation of Banyumasan music is the same as the understanding of rhythm according to Martopangrawit, namely the widening and narrowing of the *gatra*. Starting from one *gatra* containing four points, which means that one *balungan* stroke contains one point, increasing to its multiples until one *balungan* stroke contains sixteen points. In Surakarta-style karawitan, this level of rhythm applies to all forms of *gending*. In contrast to the Banyumasan Karawitan, the level of rhythm in the *Lancaran*-shaped songs is distinguished from the *Ketawang*, *Ladrang*, and *Kethuk Loro Kerep*-shaped songs. The instruments used as benchmarks or guidelines for classifying rhythms in Banyumasan songs are *slenthem* and *dhendhem*. The levels of rhythm distribution in Banyumasan songs are as follows. Gendings in the form of *Lancaran*. Table 2 shows the level of rhythm in the Banyumasan *gending*.

1. 6 5 3 2
2. . 6 . 5 . 3 . 2
3. ... 6 ... 5 ... 3 ... 2

Table 2. Indicates the level of rhythm in the Banyumasan *gending*

Level	Rhythm	Symbol	Filling each <i>Balungan</i>
I	<i>Lancar</i>	1/1	1
II	<i>Dados</i>	1/4	2
III	<i>Wilet</i>	1/8	4

It should be noted that the discussion regarding the application of *bongkel* playing techniques only revolves around the *lancaran* rhythmic Banyumasan songs, which are usually presented using the *bongkel* instrument, namely the composition of the *gending* which, when classified as *balungan nibani*, *mlaku* and *pancer*. Meanwhile, other forms of *gending*, such as *ketawang*, *ladarang*, *ketuk kerep*, etc., which were not originally presented using *bongkel*, will not be discussed here—likewise, other music outside the rhythm of *lancaran* and new creations. *Gending bongkel* has characteristics: the compositional structure (composition and form of the *gending*) is relatively simple, the song sentences are short, a minimum of two lines (eight *gatra*) and a maximum of four to four-five lines that are presented repeatedly. When observed in terms of shape and structure, the *bongkel gending* consists of three main parts: the *buka*, the *pokok*, and the *suwuk*. The *buka* part is marked with Roman numerals I, the *pokok* part uses Roman numerals II and the *suwuk* part uses Roman numerals III.

Part I (*buka*) means the beginning or the beginning of a song, and the melody presented is still simple in the sense that there are not many variations. Part I is usually taken from the first or last five songs of each song. For example, a *gending* begins with 6 tone (*nem*), then *nem* tone is used as a benchmark (basic) to start the *gending* that will be presented by sounding the note. Sometimes *gending* also begins (*buka*) by taking the last *seleh* tone (tone *suwuk*) in each *gending*. Clearly, this case is similar to or even the same as the sound of the *thinthingan gender* in starting the presentation and similar to the voice-taking technique in non-gamelan music choirs, for example, invoicing the notes of 1 (do), 2 (re), 3 (mi) and so on. Next is part II (*pokok* song), which is presented repeatedly using various variations of the song (Javanese: *wiledan*). In the presentation, both tempo and rhythm are completely dependent on the individual player because there are no other supporting instruments that are included in it. For this reason, if the *gending* presentation is considered sufficient if want to stop

(Javanese: *suwuk*) or go to part II, then the two *gatra* before the last song sentence in each *gending laya* or the tempo of the playing are added until *seleh*.

There are approximately 30 (thirty) *gending bongkel*, but only 19 (nineteen) *gendings* have been found so far. Meanwhile, the other 11 (eleven) *gendings* have not been documented because Kasmudi (*Bongkel* player) himself has forgotten because the *gending* is rarely played, and the only thing he can remember is the name of the *gending*. The names of the nineteen *gendings* that have been documented include: *Angklung Cangklek*, *Andhe-andhe Lumut*, *Bakul Bongkreng*, *Bancet Ngorek*, *Bongkel Jagung*, *Garut*, *Jagung Jali*, *Jemuah Wage*, *Kalimanahan*, *Kembang Kacang*, *Kulu-kulu*, *Lenggangkangkung*, *Malangdhoi*, *Nggoreng Kacang*, *Rabi-rabi Randha*, *Randha Ider*, *Sorogan Njaba*, *Sorogan Njero*. Most of these *gendings* are presented instrumentally (without text), except for the *gendings* of *Rabi-rabi Randha*, *Thole-thole Malangdhoi*, and *Nggoreng Kacang*, which are accompanied by vocals. The songs' contents or lyrics generally contain or tell stories about everyday life, such as those about agriculture, male-female relationships, daily living instructions, and so on, all of which are expressed using everyday language, specifically the *ngoko* language in the Banyumasan dialect.

4. Conclusion

This study concludes that the musical feature that stands out from *bongkel* music is the *imbal* technique; this playing technique is unique and rare. *Bongkel* music is the oldest bamboo music in Banyumas, and became the forerunner to the emergence of *angklung buncis*, *krumpyung*, and *calung* music. Tracking the documentation of this *bongkel* is a very valuable contribution to the arena of karawitan education, especially Banyumas karawitan. The results of this study can be used to develop a bamboo music development program in Banyumas, Central Java, and make *bongkel* one of the materials for developing Banyumas bamboo music based on rural agricultural traditions Banyumas.

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