

# Characterizing the Design and Economics Components of Jewellery into Designomics Model of Indigenous Community: A Case Study of Hmong Mae-Sa, Chiang Mai, Thailand

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**Jaruwan Pengsiri\***

**Worasiri Boonsue**

Faculty of Humanities and Social Sciences, Chiang Mai Rajabhat University, 202 Chang Puak, Muang, Chiang Mai, THAILAND

[jaruwan\\_pen@g.cmru.ac.th](mailto:jaruwan_pen@g.cmru.ac.th)\*

**Hema Zulaika Hashim**

Formgiving Research Group, College of Creative Arts, Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia

**Zakiyah Hassan**

College of Creative Arts, Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia

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## Abstract

This study aimed at (1) exploring the characteristics of Hmong silver jewellery and its production process and (2) proposing a new formula of design concerning design and economics components. The eight silver jewellery experts from the Hmong indigenous group were purposively selected as the participants. The in-depth interview was conducted to collect data about the entrepreneurship, the designomics and design process, and the knowledge management of the Hmong indigenous group. The results showed that (1) the main characteristics of Hmong's silver jewellery represented the natural environment, geometric shapes, implementation of modern patterns to original patterns and the production process consisted of five steps, and (2) a new formula concerning design and economics components consisted of three main components: Aesthetic component concerning the structure, pattern, and materials; Economic component concerning uniqueness, target customers, raw materials, setting a sale price, and sales distribution; and social responded component concerning community consideration, environmental consideration, and wisdom transfer to the next generation. The findings of this study advance our understanding on the interrelationship among wisdom, designs, and economics of Hmong's silver jewellery. They can be used as a guideline in silver jewellery production process contributing to jewellery business, especially that of the Hmong indigenous group.

**Keywords:**

Hmong; Indigenous; Northern Thailand; Jewellery; Silver ware

**1 Introduction**

Indigenous people are groups of people that share collective ancestral ties to the lands and natural resources where they live, occupy or from which they have been displaced (The World Bank, 2022). They have not only similar traditions, but also relevant cultural uniqueness and races. People of the same indigenous group usually feel that they are rooted from the same family and cultures. This attached feeling results in creating the identity of community belonging and the nation.

In Thailand, the estimated number of indigenous population is around five million people. In northern Thailand, there are approximately one million people from at least 20 different indigenous communities living in the mountainous areas. Among those groups, Hmong is the group that has outstanding characteristics including their rituals, food, and costumes, for instance. Their handicrafts have gained considerable interests from people around the world as their works are hand-made, making it unique even when compared with another piece of the handicraft of the same type. Hmong's notable handicrafts include embroideries, candle painting on hemp clothes (Hmong Batik), and souvenirs. Their silver jewellery, nonetheless, is the most expensive handicraft of Hmong's handicrafts.

In jewellery industry, a design the key to success in jewellery business because it is appealing to individuals' conscious and subconscious. Design is the ultimate creativity differentiator for a designer in producing much sought-after jewellery creations in a highly competitive market. To achieve this, a designer should have a firm grasp concerning needs, science, technical knowledge, creativity, time frame and costing. With full understanding of the factors mentioned, the question hence emphasizes on if the design adheres to the economics of production which, in return, yields more value to customers. There are many studies about indigenous groups in Thailand. Nonetheless, the study investigating the jewellery of indigenous people in Thailand cannot be found.

Therefore, the researchers were interested in (1) exploring the characteristics of Hmong silver jewellery and its production process and (2) proposing a new formula of design concerning design and economics components.

**2 Literature Review****2.1 Hmong****2.1.1 History of Hmong indigenous group**

Hmong indigenous group was originated in the Pre-Han Period. They settled in the Yellow River Valley for at over 3,000 years. There are three beliefs about the origins of

Hmong indigenous groups. The first belief was illustrated by a French bishop named Savina. He proposed that the ancestors of Hmong migrated from the North Pole. His idea was derived from the data from the interview he conducted with Hmong people in northern Vietnam living in the territory colonized by French during the pre-World War II era. According to the Hmong's legend, they primarily lived in the cold land covered with snow, and during the day, the sun could be seen for six months. Then, they immigrated to the north of China, to Mongolia descending south of China into what is now the border of China, Vietnam, Laos, Thailand and Burma.

The second belief belongs to the Hmong people of the Ban Winai School at Ban Winai Evacuation Center, Pak Chum District, Loei province, Thailand. This belief is similar to the first belief in that Hmong was originally from a western country. However, this belief was due to the close pronunciation among words such as the name "Sinchai" in Laos language and the name "Xeem Xais" in Hmong language; and the word "Hmong" (Hmoob / Moob) and the word "Mongolian," for instance.

The third belief was from the Hmong people in Yunna, China. According to the Chinese historical evidence and their ancestral legends, it is believed that the Hmong ancestors migrated from the eastern coast of China or from the Yellow Sea. They gradually moved along the Huang Ho River (or Yellow River or Dej Dag) into the area that is now central China. When they encountered the Mongols migrating from the Yellow River and the Yangtze River (Dej Ntev), their Hmong ancestors headed southwest and entered the area they currently live in. Additionally, there are more cultural evidences that related Hmong indigenous group with the sea and the Yellow River such as a spiral pattern, two crossed lines pattern symbolizing the Yellow River and Yangtze River, as well as the proverbs about Hmong legends and the Yellow River.

To summarize, "Hmong" is the name given to a group of people living in southwestern of China, northern Burma, Laos, Vietnam, Thailand, and some western countries. For people in Southeast Asia, the Hmong are sometimes referred to as "Miao" which contains negative meaning. This term, thus, is not generally used to refer to the Hmong

### **2.1.2 Hmong in northern Thailand**

In the area of Lanna or northern Thailand, it was found that the Hmong indigenous group began to settle in between 1800 and 1900 BCE. Currently, the Hmong people have consistently immigrated to live in different provinces in the north of Thailand. They include Chiang Rai, Chiang Mai, Mae Hong Son, Lampang, Tak, Phrae, Nan, Uttaradit, Phitsanulok, and Phetchabun. For the Hmong people in Chiang Mai, they live in many areas which are Fang, Chiang Dao, Mae Taeng District, Hang Dong, San Pa Tong, Samoeng, Chom Thong, Hot, Omkoi, Chiang Dao, Mueang Khong, Mueang Na, and Mueang Haeng.

### **2.1.3 Hmong indigenous group at Chiang Mai**

In Chiang Mai, there is a Hmong hill tribe village with a population of about 1,200. This area is known as “Ban Mae-Sa Mai”. It is located at Moo 6, Pong Yang, Mae Rim, Chiang Mai.

The Hmong community at Ban Mae-Sa Mai was initiated as a consequence of the Hmong immigration from Ban Dong Sam Muen, Mae Chaem, Chiang Mai, and the nearby village called Ban Mae Sa Kao in 1965. During that time, more Hmong people from other villages gradually migrated to join the Hmong indigenous group at Mae-Sa Mai. Then, in 1974, the Hmong group moved out from their original habitat (Pong Yang Nok—a village in Ban Mae-Sa Mai) so as to create their own Hmong community village known as “Ban Hmong Mae-Sa Mai village”. This village was officially declared in 1974 and has been governed by its community leader since then. The responsibilities of the leader involved with religious practice and community services. In 1982, the Hmong arranged their governing system by appointing the official succession of the village

### **2.1.4 Silver jewellery of the Hmong Mae-Sa Mai indigenous group**

Hmong’s silver jewellery entrepreneurship at Mae-Sa-Mai village was originally initiated by Mr. Seksit Pakarasith. When he was young, he studied at the occupational training center at Chitralada Palace in Bangkok. It is a training hub for Thais, especially those from the most impoverished families with many children and simple could not support themselves, to become craftsmen who can find ways to improve upon their living conditions. Throughout those years, he gained knowledge and experiences the artistry in producing artworks. Because the teachers at Chitralada Palace are experienced craftspeople and handicrafts masters, Mr. Seksit Pakarasith has become “Queen Sirikit Institute’s craftspeople”. They are skilled craftspeople who are well-versed in the arts of handicraft, from basic to advanced levels. After 13 years at the occupational training center, he returned to his hometown at Mae-Sa, Mae-Rim, Chiang Mai and passed on his knowledge and experiences to his community members. He, along with his community members, established a Learning Center (Ban Mae- Sa Mai) called “Hmong Folk Wisdom Self-Access Learning Center (Ban Mae-Sa Mai)” where the potential of their community has been promoted. Apparently, the silverware products created by his community were widely accepted. In silver jewellery production, the Hmong indigenous people are key persons. They have been acknowledged for their knowledge and craftsmanship for decades. Undoubtedly, by having Mr. Sakit as a role model of the community, the Hmong Mae-Sa Mai people still inherit their wisdoms regarding silver jewellery production, transfer their knowledge to younger generations, and bring their wisdom to business.

## **2.2 Silver Jewellery**

Silver jewelry is solid white metal with shiny surface. It can be melted and beaten to plates with different thickness as well as forms (Wongsaengchan, 2016). Silver can be found in nature as a lump or dust in the sand. Thais started producing products

made of silver since Sukhothai period. Silver products have been widely used in northern Thailand, particularly silver jewelry such as bracelets, belts, and earring. (In-am, 1992).

### **2.2.1 Silver jewellery designing**

According to Jutaviphat (2002), there are four aspects taken into account to design silver jewellery: Art Composition, Artistry, Utilization, and Creativity. Each aspect is described as follows:

The first aspect is art composition. It refers to important components in art or visual arts. Each component can be used to create a work of art in different ways so as to create different feelings. The significant components in art composition include (1) Line, in jewellery production, refers to a line with length, width, thickness, visible to the naked eye. Various types of lines signal different emotions. For example, a straight line signals directness and space; a wavy line signals movement and arousing interest; a curve signals movement, gentleness, and infinity; and a zigzag line or a sharp angles gives a feeling of breaking and a severe pain. Because different kinds of lines influence emotions in different ways, it is important to consider the structure and the concept of the product being created. This explains why a large amount of silver jewellery uses curve lines created by hand drawing to construct emotional feelings; (2) Shape and form that refers to the whole work with width, length, and height. The shapes and forms that are used in jewellery work are natural such as human shapes, animal shapes, and plant shapes; geometric such as spheres, squares, triangles; and creative that do not have specific characteristics; (3) Texture or pattern is the appearance of the surface of things or materials that can be seen and felt such as rough and smooth. Rough surfaces give a feeling of stability and strength, while smooth surface gives a light and comfortable feeling. The textures in silver jewelry designs are generally shiny. A silver jewellery craftsman can create more texture on the silver jewellery surface through engraving. The texture can be blended with other elements in silver jewellery design and helps demonstrating the feeling and emotion more clearly; (4) Colors refers to the color of the material used in producing silver jewellery—the common color of silver jewellery is white, grayish white, and metallic. These specific colors of silver jewellery make the products more expensive. It is unusual to add other colors in silver jewellery products, especially those produced by the Hmong people.

The second aspect is artistry. Previous researchers such as Warren (2018), Detrina (2020), and Wannarumon (2006) suggested that the artistry aspect important for designing silver jewellery include (1) Harmony. It refers to the integration of art composition elements. This results in the blend of all elements in a piece of work; (2) Balance. It refers to the balance of arranging all elements in a piece of work. Balance can be divided into two types. The first type is the left-right balance or Symmetrical Balance. It means balanced by size, shape, or colors in a product. The second type is the unequal left-right balance or Asymmetrical Balance. It is a balance created by contrasting shapes, textures, or colors in a product. Though, contrasting results in

harmonious; (3) Emphasis. For a piece of art work, there must be one part that is more emphasized than the others and is surrounded by supporting elements. An artwork without an emphasized element cannot interest anyone. There are three ways to create an emphasis on a particular part of an artwork—by enlarging the proportion, by using colors, and by repositioning.

The third aspect is utilization. In the study of Warren (2018) and Wongsangchan (2016), they gave examples of how a design and utilization is connected. In designing a necklace, factors such as length, ways of stringing, and balancing the elements of a necklace are considered. When a necklace is worn, the balance of the left and right side of the necklace is equal. This structure of the necklace leads to the pendant or the highlight of the necklace. However, unequal left-right balance is also used but for displaying a particular design. Whether a necklace is for a man, a woman, or a child, the design is always created to suit the utilization of each occasion.

In designing a ring, a designer would primarily be aware many relevant aspects such as age and gender of the consumers; a finger the ring will be used; and an occasion the ring is for—special occasion or daily life. The consideration of utilization or function is important for choosing the right material as well as the principles of artistry for designing a ring.

That is, the design should carry aesthetic qualities to impress anyone who sees it, be comfortable to wear, and has harmony of all elements. Additionally, the simple shapes of elements of a necklace make it possible to be worn in many occasions. While the design, material, utilization, and beauty must be related; the usage purpose and consumer behaviors must be clearly indicated separately based on the characteristics of the consumers. This would contribute to the appropriate hanging style

In designing a bracelet and a bangle, utilization and the consumers are the major concerns in a similar way in designing a necklace. The few different concerns include length of the bracelet which is shorter than a necklace, and a hanging decoration that makes a bracelet and a bangle not suitable to be worn in daily life.

In designing an earring, a jewellery designer is more meticulous since an earring is used very close to the face so as to highlight the beauty of the face. At the same time, a consumer would choose an earring with more consideration in accordance with his/her face structure. The common shapes of earrings are geometric, natural, and free-form. The material is light. When it is worn, it should not lengthen the ear of a user. Basically, earrings are designed to match with other types of jewellery such as necklaces, brooches, and rings.

Warren (2018) and Wongsangchan (2016) further emphasized on the physical structures of a jewellery user. Because each user has different body structures, the style and size of the jewellery must be varied to match with each user. At the same time, when a piece of jewellery is used, it should not cause any dangers, pains, or wounds to a person who wears it. This would promote an increase in purchase rate

The final aspect is creativity. It is believed that a good designer must have creativity, be able to think spontaneously, keep up with changes in society, be able to apply the basic principles of artistic beauty to help create designs, and love exploring new things. Differences in jewelry design today and jewelry from the past are explicitly different in terms of shapes and materials. In the past, the design of jewelry was luxurious, structured, complex, produced from expensive material, clearly exquisite and delicate. Contrarily, the current jewelry have simple shapes, can be used in a variety of situations, have patterns and material relevance, and focus more on structure of the work than the complex pattern.

### **3 Methodology**

#### **3.1 Scope of the Research**

This study is the qualitative study. The nature of qualitative research is to discover phenomena and understand those phenomena from the perspective of the participants in the study. It should be noted that participants for qualitative studies are generally smaller than those in quantitative studies, for qualitative research does not aim to make generalization or examine relationships among variables. Instead, it aims to explore and understand meaning, concepts, and process being ascribed to individuals or groups in a certain circumstance. One piece of data or a code of qualitative research is, therefore, potentially meaningful in understanding each circumstance (Berg, 2007; Creswell, 2009; Mason, 2010). According to Guest, Bunce, and Johnson (2006), a sample size for qualitative research should be minimal but sufficient to develop themes, concepts, and interpretations. They suggested that a sample size of six is sufficiently potential. A large sample size, on the contrary, would generate such repetitive data and tedious work for researchers of qualitative studies.

The research area scope is the Hmong indigenous group in Baan Mae-Sa Mai, Chiang Mai, Thailand.

#### **3.2 Population and sample**

The population of this study were 22 silver jewellery experts from the Hmong indigenous group, Mae- Sa, Mae-Rim, Chiang Mai, Thailand. They included local wisdoms, wisdom teachers, community leaders, and silver jewellery entrepreneurs. The sample group of 8 participants were purposively selected for the in-depth interview.

#### **3.3 Research instrument**

The research instrument was the interview. The purpose of interviewing is to verify, correct, and extend information gained by the researcher. It also provides information from the participants' perspectives—what they think or how they feel about something (Creswell, 2009; Fraenkel & Wallen, 2008). In this study, the type of the interview chosen is semi-structured interview due to its flexibility favorable for a

large number of researchers, particularly those conducting interpretative studies (Nunan, 1992; Siriwan, 2007). Moreover, it allows the researcher to control the interviews by means of several predetermined questions (Prakongchati, 2007).

The interviews in this study consist of two types of questions; the predetermined questions and the follow-up questions. The predetermined questions are constructed as the reflection of the research topic. They are used as guidelines during the interview. The predetermined questions of this study elicited data in four main extents: general information, entrepreneurship, designomics and design process, and knowledge management. On the contrary, follow-up questions are not prepared beforehand. They emerge spontaneously as inquiries to get details and expand answers to the predetermined questions. This type of questions helps the interviewer disclose the interviewees' opinions on the issue (Worajittipol, 2010).

To analyze the data of this study, a coding process was used. It is a part of the process for constructing grounded theory proposed by Strauss and Corbin (1990). The coding system comprises four stages which are transcribing, open coding, axial coding, and conclusion.

## **4 Findings**

**Research Objective 1:** To explore the characteristics of Hmong silver jewellery and its production process

### **Results:**

#### **1. Characteristics of Hmong silver jewellery**

It was found that the main silver jewellery products of the Hmong indigenous group are rings, bracelets, necklaces, earrings, belts, bangles, pendants, and hairpins. These silver jewellery products are distinctive in that they originated and are produced solely by the Hmong people; they do not teach any aspects related to silver jewellery production to people outside their group. Also, their products are hand-made. The silver they use as raw material has higher purity level than that of other silver jewellery products in markets. This makes it easier for a Hmong craftsman to form a silver jewellery product and engrave a pattern on it since higher purity level of silver provides more malleability. As for the product patterns, they are available in the traditional designs of Hmong, and contemporary designs. The Hmong traditional designs are basically inspired by geometric shapes and nature such as flowers, trees, and clouds. These styles are popular among foreign customers. On the other hand, contemporary designs have to specific characteristics. Some are designed according to the customer's preference. Each style—traditional or contemporary,—or a mix of both styles can be found in Hmong silver jewellery. It is undeniable to say many new modern patterns have been continuously developed so as to promote the silverware business.

#### **2. The Hmong silver jewellery production process**



The production process of the Hmong silver jewellery consisted of three main stages:

Preparation stage, Designing stage, and Forming silver jewellery stage. Each stage is described as follows:

1) Preparation stage









At this stage, the Hmong silver craftsmen prepare raw materials and their devices to produce silver jewellery products. To prepare raw materials, the Hmong craftsmen purchase 100% pure silver substance. It can be Indian rupee coins or silver beads. One Indian rupee coin can create two silver rings. The Indian rupee coins are available at most gold shops in Thailand. Also, they can buy Indian rupee coins from some Hmong families since they are used as dowry gifts in their traditional weddings. For devices preparation, a pressing machine is essential. It costs 60,000 baht. Each craftsman has to buy raw materials by himself/herself. Other devices for silver jewellery production are available at Hmong Folk Wisdom Self- Access Learning Center (Ban Mae-Sa Mai).

2) Designing stage

Silver jewelry is the art of decorating individuals' body representing cultures related to clothing of Hmong (Jingjing & Onkam, 2021). Because silver is a symbol of stable and happy life, everyone Hmong family has to produce or buy it for their children to wear in important traditional events (Rodkum, Egwutvongsa, & Saributr, 2016). From interviewing the participants and observing the Hmong people, it was found that the Hmong people usually use silver jewellery such as necklaces, bracelets, earrings, rings, hairpins and Indian rupee coins their bodies and clothes for decorating . When the Hmong craftsmen create a design, they choose something from their nature surroundings or a geometric shape. Many of their designs are created based on the integration of the original designs and the modern designs created by themselves or borrowed from other modern products. Table 1 shows designs of Hmong silver jewellery.

**Table 1:** Patterns in silver jewellery of Hmong Indigenous group

Patterns	Silver products			
	Belts	Necklaces/Pendants	Hairpins/Earrings	Bracelets
Animals		  		
Flowers	  			
Geometric shapes			 	

Leaves/Clouds				
Others			 	

### 3) Forming silver jewellery stage

The common silver jewellery produced by the Hmong people are rings, necklaces, bracelets, and anklets. Followings are details of how silver jewellery of the Hmong people are formed at Ban Mae-Sa, Mae- Rim, Chiang Mai.

First, creating a lump of silver substance—the Hmong craftsmen melt silver beads or Indian rupee coins in the furnace. Then, they reheat the melted substance by using a torch so as to mold it and get a lump of silver substance. (see Figure 1)



**Figure 1:** Refining the product

Second, creating a flat silver plate—a lump of silver substance is soaked in acid water to reduce the temperature. The qualities of acid would help the silver remains bright and white. After the lump of silver is cool and becomes hard, it is beaten until it

is flat, making it easier for pressing. Then, the flat silver sheet is pressed 3-4 times by using a pressing machine (see Figure 2)



**Figure 2:** Refining the product

Third, shaping the product—the Hmong craftsmen cut the silver plate according to the desired form and design, and polish it with a file so as to prevent possible cuts while a customer is wearing the jewellery. (see Figure 3)



**Figure 3:** Refining the product

Fourth, engraving the product— the Hmong craftsmen heats the formed plate to make it softer. Then, they engrave a pattern on it. As earlier mentioned, most of the patterns are flowers, trees, or animals. (see Figure 4)



**Figure 4:** Refining the product

Lastly, refining the product—once the pattern is engraved, it will be welded and bent to attain more details of the desired shape, soaked in mild acidic water (or lime juice), and polished until it is completely white. Other colors can be added if desired. (see Figure 5)



**Figure 5:** Refining the product

**Research Objective 2:** To propose a new formula of design and economic consideration as functional guidelines for the silver jewellery design industry

**Results:** The results from the interview demonstrated that a new formula of design and economic consideration must include the three main components that are Aesthetic component, Economic component, and Social responded component. Each component is described as follows:

1) Aesthetic component

Craftsmen or manufacturers should emphasize on aesthetic component as a fundamental when they create their craftwork or silver jewellery. Aesthetics can be represented in three ways.

The first way is through the structure of their craftwork. The beauty of the structure of Hmong silver jewellery is that of the overlaid patterns. Examples include a 3-layer ring which the curve lines are overlaid for 3 layers resulting in the height of the product; a dangling necklace which is made by bringing together three necklaces, arranging them in layers, and decorating with small bouquets; and a round flat necklace which is decorated with several dangling necklaces over it.

The second way is through a pattern of silver jewellery. A pattern should be created on the surface of silver jewellery by using a stamping tool. A craftsman would create or combine patterns regarding their creativity. Patterns that are inherited from their ancestors such as spiral patterns, fish patterns, leaf patterns, wave patterns, star patterns, sun patterns. and various types of vines can also be deployed.

The last way is through materials. Hmong indigenous group usually use real silver when they create silver jewellery used for decorating their bodies. This is because real silver has shiny smooth surface. Also, because real silver is highly malleable, it is easier for a craftsman to bend, roll, and stamp the silver plate when they produce silver jewellery.

## 2) Economic component

Craftsmen or manufacturers should be aware of economic component when they produce silver jewellery. This component consists of five elements.

The first element is uniqueness or the distinction of the products. Hmong silver jewellery has particular forms and patterns which make it different from silver jewellery of other indigenous groups, for example, Karen indigenous group, or even silver jewellery produced by Thai people. Therefore, craftsmen of the Hmong indigenous group who produce silver jewellery should give priority to traditional product design approach so as to attract the customers' interests.

The second element is target customers. There are three groups of the target customers of silver jewellery. The first group is the indigenous group of Hmong. They use silver jewellery in their traditional ceremonies and daily life. The second group are customers who are foreigners. They are fond of Hmong silver jewellery because it has specific characteristics. The last group is Thai customers who like to mix and match their personal jewellery with modern designs and patterns, with silver jewelry produced by the Hmong indigenous group. Obviously, each group has different preferences. Therefore, it is beneficial for the Hmong silver jewellery craftsmen to know which kinds of products should be produced in order to meet each group's preferences.

The third element is raw materials. The raw material for creating silver jewellery is pure silver which can be found in the form of Indian Rupee coins available at many gold shops in Muang, Chiang Mai. These shops import silver coins from foreign countries. The craftsman can also use the Indian Rupee coins that they have collected since the ancestor's era. Though, the latter was unlikely to be practical since most of them have been depleted. The benefits of using Indian Rupee coins is they are more malleable than other silver raw materials. Additionally, they brings out more shine and smoothness to the products.

The fourth element is setting a sale price. The actual selling price is established based on raw material price, the production labor cost, and a 10 percent fee deducted for the Hmong Folk Wisdom Self- Access Learning Center (Ban Mae-Sa Mai). Nonetheless, the price of the raw material is related to the retail price of the silver Rupee coins varied by the price of gold. As such, the price of silver jewellery should be estimated but flexible.

The fifth element is sales distribution. Currently, the Hmong craftsmen distribute their silver jewellery by themselves at the Hmong Folk Wisdom Self-Access Learning Center (Ban Mae-Sa Mai) only. The customers can contact them by making a call, texting them through the Line application, and at an exhibition in Chiang Mai or Bangkok.

## 1) Social responded component

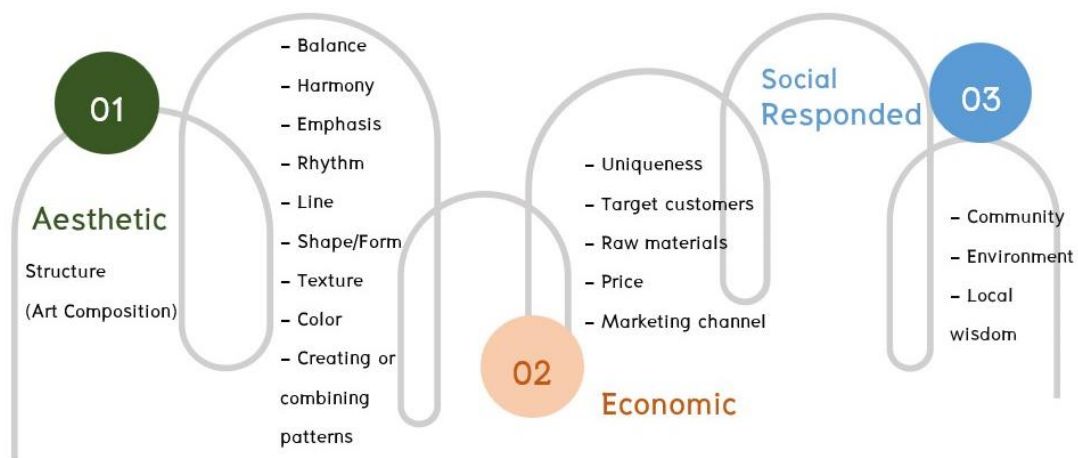
Social responded component mainly concerns with the relationship between the silver jewellery business and the surrounding people. It consists of three main elements.

The first element is community consideration. This is portrayed by the establishment of the Hmong Folk Wisdom Self-Access Learning Center (Ban Mae-Sa Mai). Mr. Seksit Pakornsit, the founder, primarily aimed to promote job opportunities for community members—any community members who have free time from their work can work as a silver craftsmen at the center. As such, they could earn money for themselves and their families.

The second element was environmental consideration. Operations of silverware entrepreneurs under the name of the Hmong Folk Wisdom Self-Access Learning Center (Ban Mae-Sa Mai) emphasizes on the use of raw materials (silver) that can be melted and reused without destroying the environment. Moreover, the production process has to be environmentally friendly, creates no waste nor pollution to the community.

The last element was wisdom transfer to the next generation. At present, the Hmong Folk Wisdom Self-Access Learning Center (Ban Mae-Sa Mai) is open for community members, youth and people who are interested in learning about the creation of Hmong silver jewellery and Hmong local wisdom. At Chao Pho Luang Upatham 7 School, there is a local curriculum developed by the Hmong Folk Wisdom Self-Access Learning Center (Ban Mae-Sa Mai) that students can learn as a required course or an elective course. The purpose of this practice is to transfer local wisdom of silver jewellery production to students, especially those of Hmong indigenous group. In this way, it is believed that the students could maintain the local wisdom and transfer it to the next generation too.

The above information about design and economic consideration for the silver jewellery design industry can be summarized and illustrated as the designomics model for the Hmong indigenous group as shown in Figure 6.



**Figure 6:** Designomics model for jewellery design of the Hmong indigenous group

In addition to the three main components concerned economic consideration that are used as functional guidelines for the silver jewellery design industry, this data collection process allowed the researchers and the community to exchange knowledge on silverware product design. This had led to the creation of new design for silver jewellery, contemporary design to be more specific, for the Hmong silver jewellery business. This design integrates the uniqueness of the Hmong identities and uniqueness by using Hmong original patterns and the Thai Lanna Kanok pattern. While the former emphasizes on the overlaid patterns and implementation of small bouquets, the latter focuses on the use of patterns consisting of flowers and vines placed in the geometric shapes, for example, a square and a triangles. In addition to the combination of the patterns, the new design is made to be more practical for individuals to wear in their daily life. The five new contemporary designs combining characteristics of Hmong silver jewellery and Thai silver jewellery are presented below.

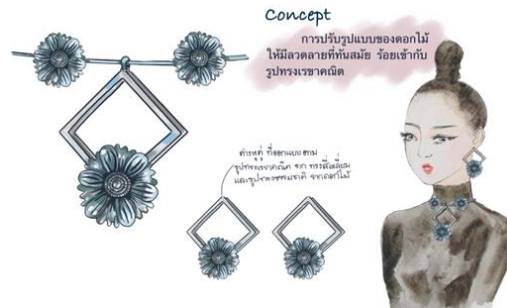
Design 1 focuses on the structure of the necklace which has an asymmetrical balance. Its outstanding design is the diamond square shape which has a pattern modified from a flower combined with patterns engraved on it. It has three layers of silver necklaces with some tassels. For an earring, it has similar structure to a necklace but with more hanging tassels to create a feeling of extension. This earring, thus, makes a wearer’s neck look longer. The characteristics of this necklace make it luxury with gentle emotions represented through the curves and straight lines of the tassels. (see Figure 7)



**Figure 7:** Contemporary design for the Hmong silver jewellery no. 1

Design 2 has a symmetrical balance structure. It features the diamond square shape—a patterned inspired by three flowers. The center flower is dominance decorated with engraved patterns of petals and stamens. An earring is similar to the neckless but smaller in size. This design provides formal look to a wearer. (see Figure 8)





**Figure 8:** Contemporary design for the Hmong silver jewellery no. 2

Design 3 has a symmetrical balance structure with round shape. It highlights the diamond square shape decorated with engraved curves connected together creating the rhythm of the work. An earring also has a diamond square shape combined with spheres and tassels below. This necklace is suitable for evening wear, matched with a dress revealing a wearer's shoulders, neck, and upper chest. (see Figure 9)



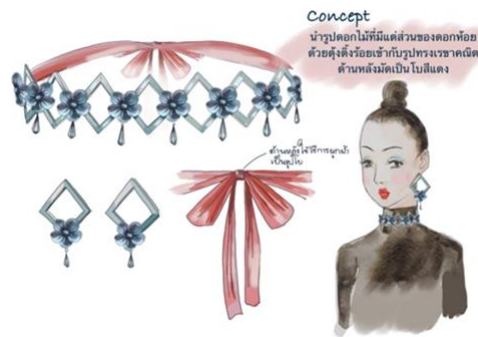
**Figure 9:** Contemporary design for the Hmong silver jewellery no. 3

Design 4 has a symmetrical balance structure. The necklace is round. It features the large pendant with geometric shapes stacked in 4 layers, and decorated with engraved curve lines and flower patterns. The earring has the same design but smaller in proportion. The inspiration for this piece is from the triangular fabric used over the top of a Hmong woman's skirt. (see Figure 10)



**Figure 10:** Contemporary design for the Hmong silver jewellery no. 4

Design 5 has a symmetrical balance structure of small diamond square shapes connected, decorated with repeated Pudtan flower patterns which results in the rhythm of the design. Hanging tassels are used for initiating the sweet and soft feeling. The earring has the same design but smaller proportion. The style of Choker of a necklace provides a feeling of security and confidence. (see Figure 11)



**Figure 11:** Contemporary design for the Hmong silver jewellery no. 5

## 5 Conclusion

By investigating the silver jewellery production of the Hmong indigenous group at Ban Mae Sa Mai, Chiang Mai, the researchers gained knowledge and understanding in the relationship between Hmong's silver jewellery production, and their way of life, their cultures and traditions. Despite the influence of technology on Hmong's ways of life, they can undoubtedly conserve and inherit their own ways of life, cultures, and traditions. The results of this study can be summarized as follows:

First, for the indigenous group of Hmong, silver jewellery represents high status and wealth. Due to their believe, "Silver is a symbol of stability and happiness in life," they usually use silver jewellery to decorate the clothes, their bodies, as a part of their cultures. In their significant ceremonies such as Hmong New Year and their weddings, they would decorate their costumes as much as they can. Their motivations in creating the patterns on their silver jewellery are from (1) their surrounding nature such as leaves, flowers, grasses, vines, fish, and butterflies; (2) geometric shapes such as a circle, a spiral, a square, a triangle, a star, and the sun; (3) application between their original patterns with other patterns such as modern patterns, Lanna patterns, Kanok patterns, reduced patterns, or the patterns from their customers.

Second, guidelines for designing silver jewellery consists of three main components: Aesthetic component, Economic component, and Social responded component.

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