

Weaving Tradition And Innovation: A Study Of The Quality Development Of Local Weaving Fabrics In Nong Bua Lam Phu Province, Thailand

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Abstract

This research aimed to improve the quality of local weaving fabrics in Nong Bua Lam Phu Province, using a combination of qualitative and quantitative research methods. The population for qualitative research comprised weaving specialists from government agencies, private sectors, and indigenous weaving groups. The population for quantitative research comprised 291 indigenous textile customers, and data was collected using questionnaires. The research focused on four aspects: raw material, personnel, pattern designs, and production processes of indigenous weaving fabrics. The findings of qualitative research indicated that customers were more satisfied with raw materials from local weaving groups than those purchased from the factory. Most personnel were older adults, and there was a need to develop weaving education for the new generation. Pattern designs should reflect contemporary innovation and regional identity, and production processes should use natural fabric dyes to promote environmental sustainability. Quantitative research findings were consistent with the qualitative research results. The research suggests that improving the quality of local weaving fabrics requires a holistic approach that considers various aspects of the production process, including raw materials, personnel, pattern designs, and production processes.

Keywords: Indigenous Weaving Fabrics, Quality, Identity.

Introduction

Nong Bua Lam Phu is a province located in the northeastern region of Thailand, bordering Udon Thani Province, Khon Kaen Province, and Loei

Province. The province was created in 1993, along with Amnat Charoen Province and Sa Kaeo Province, and is among the three new areas of Thailand that separated from Udon Thani Province. Nong Bua Lam Phu has a long and fascinating history, dating back to the year 1759 when it was founded by Phra Wor-Phra Ta.

According to legend, Phra Wor-Phra Ta built Nong Bua Lam Phu by creating a city wall and equipping a ditch, a battle tower, and a camp to protect against the enemy, especially the enemy from Vientiane. A stone wall was built, and a battle tower was constructed at the foot of the mountain on Phu Phan Kham, near the Thao to Waterfall area, about 1 kilometer east of the city wall to the north. In 2310, King Siribunsan of Vientiane sent an army to suppress the battle at Chong Nam Chan (Thao to Waterfall) on Phu Phan Kham, fighting for three years but still unable to defeat the defenders. Vientiane then sought the help of the Burmese army, which attacked Nakhon Khuean Khan, prompting Phra Wor-Phra Ta to evacuate the people to flee and rely on King Luang Chaikuman of the Lan Xang Champasak Kingdom in 1778.

King Taksin the Great then asked Chao Phraya Chakri to raise an army to help Phra Wor-Phra Ta drive out the army of King Siribunsan and attack Vientiane. At that time, he brought the Emerald Buddha, which King Chaisetthathirat had brought from Chiang Mai. Nakhon Khuean Khan City came to depend on Thailand. In 1890, the government organized for the governor of Nong Khai to command 16 large cities and 36 colonies called the Northern Lao City, and the city of Nakhon Khuean Khan depended on Nong Khai City. The governor of Nong Khai appointed Phra Wichayokhom Kamutkhet to rule Nakhon Khuean Khan, which had the status of the capital city. He renamed Kamutthasai city in the year 1900. The name of the Northern Province was changed to Udon Thani, and to include the cities in Udon Thani as five, the city of Kamutthasai was included in Ban Mak Khaeng in 1906. In 1907, it was reduced to Nong Bua Lam Phu District, affiliated with Udon Thani Province, with Phra Wittaya Kamutkit as the first District Chief. Nong Bua Lam Phu District was prosperous respectively until being upgraded to Nong Bua Lamphu Province on December 1, 1993.

Nong Bua Lamphu Province has an area of 3,859.086 square kilometers with a population of 513,316 people (2020, Nong Bua Lam Phu Provincial Statistical Office), administratively divided into six districts, 58 sub-districts, and 687 villages, most of whom are engaged in agriculture. The people of Nong Bua Lam Phu have long used the wisdom passed down from generation to generation and their cultural traditions to create beautifully patterned silk and hand-woven cotton fabrics, which are becoming increasingly valuable and rare every day.

Exhibit 1. Thai fabric pattern pattern



Exhibit 1. showcases the Thai fabric pattern called "Roots of the Lum Phu City," which recently received international recognition at an award ceremony held in the Republic of Korea. The design won the prestigious GOLD Prize and a Special award from the World Intellectual Property Organization (WIPO). The fabric pattern was created by Kwanta Thai Textile Art House in Nong Bua Lamphu Province, in collaboration with Suan Sunandha Rajabhat University.

The award is a testament to the exceptional creativity and skill of the artisans involved in creating this unique fabric. The "Roots of the Lum Phu City" design reflects the rich cultural heritage of the Nong Bua Lamphu Province, a region known for its traditional silk and cotton weaving techniques. The intricate patterns and colors used in the fabric are inspired by the natural beauty of the local landscape, as well as the cultural traditions of the region.

The award-winning fabric design is the result of a collaborative effort between Kwanta Thai Textile Art House and Suan Sunandha Rajabhat University. The university provided technical support and design expertise, while the artisans at Kwanta Thai Textile Art House brought their weaving skills and knowledge of traditional patterns to the project. Together, they created a stunning piece of textile art that celebrates the unique cultural identity of the Nong Bua Lamphu Province.

The WIPO Special award is a significant recognition of the importance of protecting and promoting traditional knowledge and cultural expressions. It acknowledges the value of the local wisdom and cultural

heritage that is embedded in the fabric's design. The award also highlights the importance of collaboration between academic institutions and local artisans to create innovative products that celebrate local culture and traditions.

Root art of Lum Phu

The history and culture of Nong Bua Lam Phu Province have contributed to the creation of a unique fabric pattern called "Lum Phu city roots pattern," which has recently won an international award from the Republic of Korea. This fabric pattern is a representation of the province's cultural heritage, which is rooted in the prosperity of the past and the wisdom passed down from generation to generation.

The origins of Lum Phu City can be traced back to 1759 when King Eak Palaang, the Lord Chancellor from Chiang Rung, Phra Woraracha Phakdi, and the Phra Ta Khuang Sa migrated with their troops across the Mekong River to establish their homeland. Over time, the city grew and prospered, leaving behind a rich cultural legacy for future generations.

In 1890, King Rama V changed the city's name to "Mueang Kamuttha Sai Buriram," which was later distorted to Lum Phu and then Lam Phu. Currently, the province is known as Nong Bua Lam Phu and is home to Phu Kao Phu Phan Kham, a source of natural resources and abundant crops. The people in the community live by the principles of a sufficiency economy, and the lotus flower is the provincial flower.

The province has many natural attractions, including Erawan Cave, Suwan Khuha Cave, Wat Tham Kongphon, and the Stone Shell Museum. Moreover, there are cultural heritage sites with ancient antiques, stone walls, sema leaves, and the base of a red stone temple. The Kut Kwang Soi archaeological site has excavated human skeletons, pottery of various shapes lined with ropes, tobacco pottery, ancient beads, bronze bracelets, terracotta ladles, and sandstone molds used to cast ax heads, which are assumed to be over 2500 years old. All these are a testament to the province's rich cultural history.

One of the cultural practices that have existed since the ancestors is the creation of patterns on hand-woven fabrics. The design of the fabric pattern is essential to continue these traditions. The Lum Phu city roots pattern, which has won an international award, is a representation of the distinctive identity of the province. The fabric pattern was created at Kwanta Thai Textile Art House, in conjunction with Suan Sunandha Rajabhat University Nong Bua Lam Phu Province, and it incorporates costume design and design knowledge with the weaving group of Nong Bua Lam Phu.

The creation of the Lum Phu city roots pattern is a result of the combination of local wisdom and creativity. It has become a product with a unique identity that reflects the cultural heritage of Nong Bua Lam Phu Province. This fabric pattern has been used to create various value-added products, such as clothing, bags, and other accessories, that are becoming increasingly valuable and rare every day. The fabric pattern has helped to raise the standards of local weaving products and carry on local wisdom.

The success of the Lum Phu city roots pattern is a testament to the importance of preserving and promoting cultural heritage. The province's cultural stability from generation to generation is reinforced by the promotion of local knowledge and practices through various pieces of work. This has helped to keep the traditions alive and pass them down to future generations.



Exhibit 2. Nature and purpose of the invention

The creation of fabric patterns is a significant aspect of Nong Bua Lam Phu's cultural heritage. This province has a long history of weaving, with hand-woven fabrics becoming increasingly valuable and rare every day. To preserve this tradition, the Kwanta Thai Textile Art House in Nong Bua Lam Phu Province, in collaboration with Suan Sunandha Rajabhat

University, has developed the "Roots of the Lum Phu City" fabric pattern, which won an international award from the Republic of Korea.

The fabric pattern holds great meaning for the people of Nong Bua Lam Phu, as it reflects the community's way of life, beliefs, landmarks, and identity. In fact, the fabric pattern has become a distinctive identity of the province. The purpose of creating fabric patterns is to align with the needs of consumers in the modern era while preserving the traditional handicrafts and local wisdom.

The charm of fabric patterns lies in the colors and patterns that are intentionally created on hand-woven fabrics. The fabric pattern is a combination of skillful craftsmanship, accumulated experience, and innovation, resulting in a beautiful harmony between functionality and aesthetics. The creation of fabric patterns involves storytelling, which has been passed down for generations. The stories are conveyed through symbols of ways of life, landmarks, or the identity of Nong Bua Lam Phu, making the fabric pattern not only beautiful but also meaningful.

Nong Bua Lam Phu is a small province that is overflowing with cultural prosperity, traditions, and wisdom, providing cultural stability from generation to generation. The province is rich in natural resources and abundant crops, including Phu Kao Phu Phan Kham, Erawan Cave, Suwan Khuha Cave, Wat Tham Kongphon, and Stone Shell Museum. There are also ancient sites, antiques, ancient stone walls, sema leaves, and the base of a red stone temple, among other archeological treasures. The Kut Kwang Soi archeological site, which has excavated human skeletons, pottery, and ancient beads, bronze bracelets, terracotta ladles, and sandstone molds used to cast ax heads, dates back to over 2500 years old and belongs to the same civilization as Ban Chiang.

The cultural practices of Nong Bua Lam Phu have existed since ancient times, and the creation of fabric patterns is one way of preserving this tradition. The roots of Lum Phu City fabric pattern reflects the history, traditions, and identity of the province. It has received international recognition and has become a source of pride for the people of Nong Bua Lam Phu.

In conclusion, the creation of fabric patterns is an important aspect of Nong Bua Lam Phu's cultural heritage. The fabric patterns reflect the community's beliefs, traditions, landmarks, and identity. The "Roots of the Lum Phu City" fabric pattern, developed by Kwanta Thai Textile Art House in Nong Bua Lam Phu Province, has received international recognition and has become a distinctive identity of the province. The fabric patterns are a combination of skillful craftsmanship, accumulated experience, innovation, and storytelling, making them not only beautiful but also meaningful. Nong Bua Lam Phu's cultural heritage, including

fabric patterns, is an important source of pride for the people of the province and an essential aspect of Thailand's cultural richness.

The objective of this research is to study and develop the quality of local weaving fabrics in Nong Bua Lam Phu Province. To achieve this objective, the research will use a mixed methodology, which combines qualitative and quantitative research methods. The qualitative research will be conducted through in-depth interviews with various stakeholders, including the Provincial Office, Provincial Development, Provincial Commerce, Provincial Industry, the Private Sector, the Provincial Chamber of Commerce, an academican from a university in fashion design, and four local weaving groups, totaling 15 people. The qualitative research aims to gain insights into the current situation, challenges, and opportunities related to local weaving fabrics in Nong Bua Lam Phu Province.

The quantitative research will use a questionnaire method to survey 291 customers in the area. The survey aims to gather data on customers' preferences, satisfaction levels, and willingness to pay for local weaving fabrics. This data will be analyzed to identify trends and patterns that can inform the development of local weaving fabrics in Nong Bua Lam Phu Province.

The scope of content for this research is a study on the quality development of local weaving fabrics in Nong Bua Lam Phu Province. The research will focus on identifying the factors that affect the quality of local weaving fabrics and developing strategies to improve the quality of these fabrics. This will include an analysis of the current production processes, raw materials, and design elements used in local weaving fabrics. Based on this analysis, the research will identify areas for improvement and develop recommendations for enhancing the quality of local weaving fabrics.

The time scope for this research is from August 2022 to December 2022. This timeframe is sufficient to gather data, conduct analysis, and develop recommendations for improving the quality of local weaving fabrics in Nong Bua Lam Phu Province. The research findings will be valuable for stakeholders in the local weaving industry, including weavers, designers, and policymakers, and can contribute to the development of Nong Bua Lam Phu Province as a fashion city with international recognition.

Literature Review

Wisdom of weaving

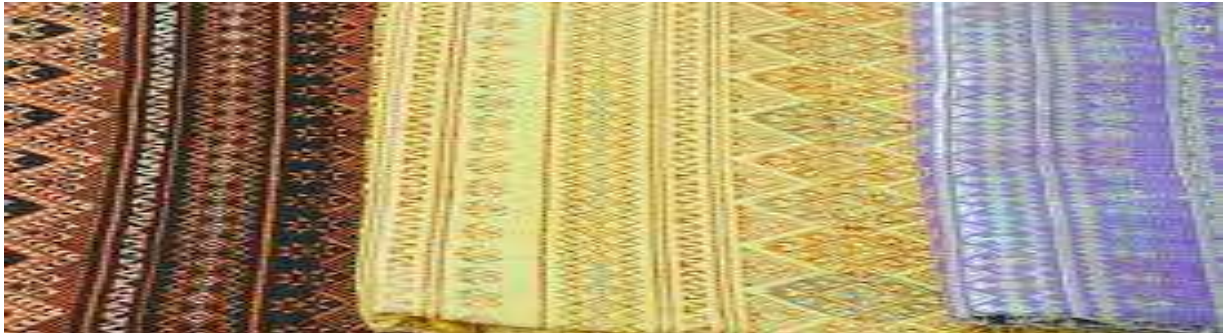
Weaving is one of the arts and crafts or handicrafts that have existed since ancient times. It is a process of producing fabrics using weft yarns and warp yarns to interlock until it becomes a fabric. Machines for

weaving are called looms (in Isan Thai dialects, weaving is often called "Tam Hook").

The Nong Bua Lam Phu Provincial Cloth Identity Committee announced that the Nong Bua Lam Phu Provincial Cloth Identity is Khit fabric and Mee. There is a royal lotus pattern in pink tones, with Mrs. Siwaphon Chuasawat, Governor of Nong Bua Lam Phu Province, presiding over the press conference. Together with leaders of community weaving groups in each area of Nong Bua Lam Phu Province on May 27, 2021

Exhibit 3. Examples of woven fabrics in various patterns of Nong Bua Lam Phu Province





The cloth identity of Nong Bua Lam Phu Province is that it is woven with Khit alternating Mee. In addition, there is a royal lotus flower pattern in pink tones. The details reflect the meaning as follows:

According to Exhibit 2., Pha Khit and Mee is a weaving technique that combines Mudmee and Khit patterns. There is a weaving technique that is more complex than ordinary weaving because it takes time and intricacy to weave the words. Khit is the native language of the Northeast. Derived from the phrase poke or stack up, which is a unique pattern of Khit pattern woven fabric, Mudmee fabric is the wisdom of creating patterns in woven fabrics by mudmee and dyeing threads or silk threads to create designs. And then incorporating into pieces Khit and

Mee's cloth has a unique way of weaving both types on the same amount of fabric.

The royal lotus pattern is the provincial flower of Nong Bua Lam Phu. And when all things are combined, it creates a woven fabric with the identity of Nong Bua Lam Phu Province.

Native weaving fabrics in Nong Bua Lam Phu Province, such as Khit silk, Every piece of cotton is handmade without using a machine and is also bleached and dyed from naturally colored materials mostly, causing the production of each piece to take some time. (Community Development Office Nong Bua Lam Phu Province 2018:39)

Pichayaporn Buasara (2018, page 54) said that fabrics in Isan cultural society could be divided into two types according to the raw materials used for weaving. Cotton and silk, it can be concluded that in the context of the indigenous weaving group of Nong Bua Lam Phu Province, weaving of Mudmee and Khit fabrics, both silk and cotton, with various weaving patterns caused by imitating nature that exists near the body or community beliefs.

Supatra Olarikadej said that weaving and fabric work is considered a work that shows the prosperity of cultural traditions and people's way of life in a particular era that has been conveyed into art. Weaving patterns to communicate to the next generation to have an understanding of the way of life at that time. It is also essential archaeological evidence that the land, which is the Thai kingdom at present, has been weaved up to use below 2500. By the people who lived scattered in this land of Laem Thong, even silk was found to have been woven into cloth since the historical period, especially in Ban Chiang archaeological site. In this ancient civilization, silk weaving was seen before. China will bring be woven into silk until it spread throughout the world.

According to the Royal Institute Dictionary (June 16, 2007), Atta means oneself and Luk means one's property. The word identity refers to the sum of the characteristics of something which makes it known or remembered.

Cha-lardshye Ramitanon (1997: Online system) said that identity is not something that happens without natural reasons but is created by culture over time, and culture is something. Created from society and culture is something that does not stop or cannot be changed, but there is a form of cultural cycle. For this reason, all the identities are produced and can be controlled and manipulated in those cultures.

Fashion design is the art of weaving people's lives into clothes using time, place, culture, and tradition as the basis to create fabric

patterns that are the essential points of fashion design. Clothing is divided into three seasons: summer, winter, and spring.

The design of the fabric pattern is considered a very delicate work because the beauty of the dress is the essential thing that depends on the fabric pattern. Italy, England, France, Japan, and The United State of America are the only five countries currently with a recognized reputation on the world stage.

The art of traditional weaving is an ancient craft that has been passed down through generations in Thailand. It involves using weft and warp yarns to create fabrics that are both functional and beautiful. Weaving machines, also known as looms, are used to create fabrics in various patterns, colors, and textures. In Nong Bua Lam Phu Province, weaving is an essential part of the local culture, and fabrics are used in clothing, household items, and other crafts.

The Community Development Office of Nong Bua Lam Phu Province (2018) notes that Nong Bua Lam Phu is an innovative community of Lum Phu people, who have a rich cultural heritage that includes weaving. The weaving technique used in Nong Bua Lam Phu is a combination of Mudmee and Khit patterns, called Pha Khit and Mee. Mudmee fabric is created by dyeing threads or silk threads to create patterns, and Khit is the native language of the Northeast, which has a unique pattern of Khit pattern woven fabric. Khit and Mee's cloth has a unique way of weaving both types on the same amount of fabric. The provincial cloth identity of Nong Bua Lam Phu is Khit fabric and Mee, which are woven with a royal lotus pattern in pink tones (Nong Bua Lam Phu Province, 2021). The royal lotus pattern is the provincial flower of Nong Bua Lam Phu and reflects the identity of the province.

The traditional weaving techniques of Nong Bua Lam Phu are not limited to silk but also include cotton (Pichayaporn, 2018). Cotton and silk are both used to weave fabrics with various patterns caused by imitating nature that exists near the body or community beliefs. The weaving of Khit and Mudmee fabrics is a complex process that takes time and skill, but it produces fabrics with unique patterns and designs that reflect the local culture (Jeamsripong & Petchmee, 2017).

Weaving and fabric work are considered cultural traditions that reflect people's way of life in a particular era, as Supatra Olarikadej notes (n.d.). Weaving patterns are used to communicate the way of life of a particular community to the next generation. It is also considered essential archaeological evidence of the land that is now the Thai kingdom, dating back to below 2500. Weaving and fabric work are also a way to show the prosperity of cultural traditions, and it is considered an art form.

The concept of identity is also important in the context of weaving and fabric work. The Office of the Royal Society (n.d.) defines identity as the sum of the characteristics of something that make it known or remembered. Culture and society are crucial factors in creating identity over time, and culture is something that is created from society. In the case of Nong Bua Lam Phu, the weaving of Khit and Mudmee fabrics and the use of the royal lotus pattern reflect the identity of the province and its people.

Fashion design is another field that is closely related to weaving and fabric work. The design of fabric patterns is considered a delicate work that is essential in creating beautiful and functional clothing. According to Nuannoi (1999), fashion design is the art of weaving people's lives into clothes using time, place, culture, and tradition as the basis to create fabric patterns. The design of fabric patterns is crucial in creating the essential points of fashion design. Italy, England, France, Japan, and the United States of America are currently recognized as the five countries with a reputation on the world stage in fashion design (Kotler, 1997).

Methodology

Sampling Technique The sampling technique used in this research is a combination of purposive and random sampling. The weaving specialists and experts were purposively selected based on their knowledge, experience, and involvement in the weaving industry. On the other hand, the customers were randomly selected from various locations in Nong Bua Lam Phu province to ensure representativeness of the sample population.

Sample Size Calculation The sample size for the customer group was determined using the Krejcie and Morgan table with a confidence level of 95% and a margin of error of 5%. The total population of customers in Nong Bua Lam Phu province was not known, so a sample size of 291 was selected. For the weaving specialists and experts, the sample size was determined based on their availability and willingness to participate in the study.

Data Collection and Analysis For the qualitative research, the data was collected through in-depth interviews conducted with the selected weaving specialists and experts. The data collected were transcribed and analyzed using content analysis to identify themes and patterns related to the quality development of local weaving fabrics in Nong Bua Lam Phu province. For the quantitative research, the data was collected through a structured questionnaire survey administered to the selected customers. The collected data were analyzed using descriptive statistics to summarize and present the findings. The data was analyzed using the

Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics such as frequency distribution, percentage, mean, and standard deviation were used to analyze the data.

Mathematic Formulas The Krejcie and Morgan table was used to calculate the sample size for the customer group. The formula used for sample size calculation is as follows:

$n = N / (1 + N * e^2)$ where n is the sample size, N is the population size, and e is the margin of error.

In this study, N was unknown, so a sample size of 291 was selected based on the assumption of a population of 5000 customers in Nong Bua Lam Phu province.

Conclusion In conclusion, this research used mixed methodology (Mix Methodology Research), which is qualitative and quantitative research in the area of Nong Bua Lam Phu Province by the researcher. The sampling technique used in this research is a combination of purposive and random sampling. The sample size was determined using the Krejcie and Morgan table. The data collected were transcribed and analyzed using content analysis for the qualitative research, and descriptive statistics were used to analyze the quantitative data. The findings of this research will contribute to the development of the quality of local weaving fabrics in Nong Bua Lam Phu province, which will enhance the competitiveness of the products in the domestic and international markets.

Data Collection

The qualitative research aimed to collect data from experts in weaving fabrics from both government and private sectors, local weaving occupation groups in Nong Bua Lam Phu Province, and fashion design academics from higher education institutions. In-depth interviews were conducted with the target group to gain insights into the quality development process of local weaving patterns in Nong Bua Lam Phu Province. The interview form was constructed and developed stepwise to ensure that all relevant aspects of the research were covered (Eaknarajindawat, 2021).

2. Quantitative research with customer questionnaires. The target group for the quantitative research consisted of 291 customers in Nong Bua Lam Phu Province. The sample size was determined using the Krejcie and Morgan tables. The questionnaire was divided into three parts: personal factors, the quality of traditional weaving fabrics, and the development of the quality of local weaving fabrics in Nong Bua Lam Phu Province. Descriptive statistics were used to

characterize the data, including percentage, mean, and standard deviation.

The mixed-methods approach, combining qualitative and quantitative research methods, allowed the researcher to gain a more comprehensive understanding of the quality development of local weaving fabrics in Nong Bua Lam Phu Province. By collecting data from experts and customers, the researcher was able to identify key areas for improvement and develop recommendations for enhancing the quality of local weaving fabrics. The research methodology was carefully designed to ensure that the data collected was accurate and reliable, and the sample size was adequate to provide a representative sample of the target population. The findings of the research can be used to inform policy and practice in the development of local weaving fabrics in Nong Bua Lam Phu Province.

Exhibit 4. Thewa Thai fabrics, beautiful woven fabrics, Ban Na Kham Hai Weaving Group, Mueang District, Nong Bua Lam Phu Province



Exhibit 5. Nong Bua Lamphu Province Opening Wichalai, Nong Bua Lam Phu weaving fabric to become **“City of Local Cloth Fashion.”**



Exhibit 6. Ban Pho Kham, Silk Weaving Group of Kut, **Beautiful Khit Silk Cloth**, Na Klang District, Nong Bua Lam Phu Province



Exhibit 7. The pattern of woven fabric unique to Ban Sok Kan Lueang is the **“Kut Kwang Soi pattern,”** a newly developed Mudmee pattern.



The research tool was a structured interview with open-ended questions about the quality development of traditional weaving fabrics in Nong Bua Lam Phu Province, emphasizing the production process, raw materials, personnel, and fabric pattern design for sewing, emphasizing men's clothing and mainly women.

Data analysis the researcher analyzed the data from the interview form. Analyze the content with descriptive statistics such as percentage and frequency, and then summarize the overview of the content.

Quantitative research

A sample population is a group of customers 291 people by using tables Krejcie and Morgan

The research tools were statistical questionnaires used to analyze the data: frequency, percentage, mean, and standard deviation.

Research Results

A research study on the quality development of local weaving fabrics in Nong Bua Lam Phu Province: a fashion city to the world can be summarized as follows:

The research results of developing the quality of traditional weaving fabrics in Nong Bua Lam Phu Province from the qualitative study of 4 traditional weaving groups found that the four traditional weaving groups are Ban Na Kham Hai local weaving group and Ban Pho Kham local weaving group, Kwanta hand sewing group weaving fabrics, and Kut Kwang Soi local weaving groups are all distinguished in different products: 1. Ban Na Kham Hai local weaving group, the distinctiveness is Khit and Mee pattern fabric by applying the Sam King pattern fabric that It is a unique identity of the Udon Thani people in the past to be modern. The weaving group has woven fabrics with a soft touch from the fermentation process of local rice varieties. It is designed to choose the material's color as a contemporary base color, not flashy. People can wear it on many occasions, emphasizing simplicity and luxury. Customers are middle-class and working people. 2. Local Ban Pho Kham weaving groups; the distinctiveness is Khit silk, which is weaved with the rake or poked the yarn stand up and inserted along the stretch line. New weaving patterns are continually invented by creating from the surrounding environment. Northeastern culture Ban Pho Kham Khit silk fabrics are luxurious and valuable. Most of the customers of the weaving group are high-purchasing power collectors or people who are fond of local materials. Since each piece of cloth is made from high-quality silk threads, there is a highly complex production process. Before weaving each piece of material, the weaver must have expertise, experience, and

a lot of patience. 3. Kwanta Hand Sewing Group Woven fabrics the group's products are outstanding in processed fabrics, handmade clothes, scarves, shawls, neckties, etc. It is a ready-made sewing that reflects the Nong Bua Lam Phu style on clothes that can be worn for many occasions. It is modern in contemporary design. 4. Kud Kwang Soi weaving group is outstanding. The Kud Kwang Soi pattern is designed from antiques excavated in the area. Most are ready-made fabrics, especially safari wear for both men and women. It is not popular to sew and found that 1. The production processes for dyeing fabrics uses synthetic and natural dyes, and especially synthetic dyes are chemical dyes that are difficult to biodegrade. However, it meets the needs of the market. Fabric patterns should be processed to be more beautiful and diverse. 2. Raw materials are procured from local raw materials and procurement from manufacturers. The problem is local raw material procurement. The raw materials must be processed into fibers, which makes the production process slower than ordering raw materials from the manufacturer's factory, which is more convenient and can be used to produce woven fabrics immediately. 3. Personnel Overall, most of the weaving personnel. 4. Pattern designs important woven fabric patterns should focus on creating a distinct identity and allowing customers to understand the practices of Nong Bua Lam Phu Province to motivate them accordingly. With the results of quantitative research, it was found that the quality development of local weaving fabrics in Nong Bua Lam Phu Province was arranged in descending order, as in

No.	List	$\bar{x}$	S.D.	Meaning
1	Production processes	4.20	0.95	Most
2	Raw materials	4.37	0.76	Most
3	Personnel	4.34	0.89	Most
4	Pattern designs	4.26	0.87	Most

Table 1. The mean and standard deviation to study and develop the quality of local weaving fabrics in Nong Bua Lam Phu Province

From the table, the mean and standard deviation of the native weaving development study, Nong Bua Lam Phu Province, ranked in descending order, the first the raw materials ($x = 4.37$, S.D. = 0.76), the second Personnel ($x = 4.34$, S.D. = 0.76), the third in pattern designs ($x = 4.26$, S.D. = 0.87), the forth in the production processes

($x = 4.20$, S.D. = 0.95)

In conclusion, the quality development of local weaving fabrics in Nong Bua Lam Phu Province is an important aspect of preserving the traditional weaving culture and promoting it to the world as a fashion city. The research study conducted qualitative and quantitative research methods to gather data from experts in the weaving industry and customers, respectively. The qualitative study identified four traditional weaving groups, each with unique products and patterns, while the quantitative study focused on the production processes, raw materials, personnel, and pattern designs. The results showed that the raw materials were the most critical factor, followed by personnel, pattern designs, and production processes. The research findings can help the weaving industry in Nong Bua Lam Phu Province to improve its products' quality and sustainability while preserving its cultural heritage.

Conclusion

In conclusion, the quality development of local weaving fabrics in Nong Bua Lam Phu Province has been a crucial topic in recent years. The research on the subject was conducted using both qualitative and quantitative methods. The qualitative study involved interviews with 15 weaving specialists from government agencies, private sectors, academics, and local weaving groups. The results showed that there are four distinct traditional weaving groups in the province, each with its unique products and customer base. The quality of the products was found to be a significant factor in influencing brand loyalty among Thai female consumers, indicating that consumers' perceptions of the quality of a brand's products play a crucial role in building and maintaining brand loyalty (Taghipour & Loh, 2017).

The Ban Na Kham Hai local weaving group is known for its Khit and Mee pattern fabric, which is made by applying the Sam King pattern fabric, a unique identity of the Udon Thani people in the past, and updating it for modern use. The group uses a soft touch by fermenting local rice varieties to create fabrics with contemporary base colors that are not flashy, emphasizing simplicity and luxury. The customer base of this group is mainly middle-class and working people.

The Ban Pho Kham local weaving group is known for its Khit silk, which is weaved with the rake or poked the yarn stand up and inserted along the stretch line. The group continuously invents new weaving patterns

inspired by the surrounding environment. The Northeastern culture Ban Pho Kham Khit silk fabrics are luxurious and valuable, and most of the customers of the group are high-purchasing power collectors or people who are fond of local materials.

The Kwanta Hand Sewing Group's products are outstanding in processed fabrics, handmade clothes, scarves, shawls, neckties, etc. It is a ready-made sewing that reflects the Nong Bua Lam Phu style on clothes that can be worn for many occasions. It is modern in contemporary design.

The Kud Kwang Soi weaving group is known for its Kud Kwang Soi pattern designed from antiques excavated in the area. The group mainly produces ready-made fabrics, especially safari wear for both men and women.

The quantitative study was conducted using a sample population of 291 customers in Nong Bua Lam Phu Province. The research tools used to analyze the data were frequency, percentage, mean, and standard deviation. The results showed that the quality development of local weaving fabrics in Nong Bua Lam Phu Province should focus on four main areas: production processes, raw materials, personnel, and pattern designs.

The raw materials received the highest mean score ($x = 4.37$) and the lowest standard deviation ($S.D. = 0.76$), indicating that it is the most critical area of concern. The production processes received the lowest mean score ($x = 4.20$) and the highest standard deviation ($S.D. = 0.95$), indicating that it is an area that requires significant improvement.

The study found that the production processes for dyeing fabrics use synthetic and natural dyes, and synthetic dyes are chemical dyes that are difficult to biodegrade. The raw materials are procured from local sources, and procurement from manufacturers is also used. The problem is local raw material procurement as it needs to be processed into fibers, making the production process slower than ordering raw materials from the manufacturer's factory.

Personnel are crucial to the quality development of local weaving fabrics in Nong Bua Lam Phu Province, and the study found that most of the weaving personnel need to be trained to improve their skills and knowledge. Pattern designs were found to be an essential area of focus to create a distinct identity and motivate customers to appreciate Nong Bua Lam Phu Province's practices.

Discussion

In terms of raw materials, the study found that local raw materials are more preferred by customers and should be encouraged for production. This would require longer processing time, but it would also promote the

use of natural fibers and support the local economy. However, it was noted that purchasing raw materials from factories is more convenient and would result in faster production times. This is a trade-off that weaving groups need to consider when making decisions about their production processes.

In terms of personnel, the study found that there is a gap in succession as the younger generation is not interested in weaving. This highlights the need for education and development in weaving skills, both at the local level and in schools. This could help to preserve traditional weaving skills and ensure the sustainability of the local weaving industry in Nong Bua Lam Phu Province.

Regarding pattern designs, the study found that local weaving groups should focus on creating a distinct identity that ties into the culture and traditions of Nong Bua Lam Phu Province. The designs should be innovative and contemporary, suitable for people of all genders and ages, and easy to maintain and reuse. This would help to promote the local weaving industry and create a sense of pride in the regional identity.

Finally, in terms of production processes, the study found that weaving groups should pay more attention to using natural dyes in fabric dyeing. This is because natural dyes are more environmentally friendly and will be more attractive to customers who are concerned about sustainability. Synthetic dyes, on the other hand, can cause wastewater disposal problems and should be regulated by relevant government agencies.

Overall, the study on the quality development of traditional weaving fabrics in Nong Bua Lam Phu Province provides valuable insights into the challenges and opportunities faced by the local weaving industry. By focusing on raw materials, personnel, pattern designs, and production processes, weaving groups can improve the quality and sustainability of their products, promote the local economy, and create a distinct regional identity that is recognized both locally and internationally. The findings of this study can also serve as a guide for other communities that are looking to develop their own weaving industry and preserve their cultural heritage.

Recommendation

1. Nong Bua Lam Phu Province has a unique identity and local weaving fabrics that are different from others with local wisdom. Therefore, it should be supported by government agencies, local government organizations, and entrepreneurs regarding the budget. New innovative techniques to improve the quality of indigenous weaving fabrics, such as the innovation of cotton fibers, make wearing suitable for the climate and not hot when wearing. The fabric must

be easy to shape and comfortable to wear. There are many options for work wear, going to ceremonies, and home wear.

2. Emphasis should be placed on the production process that uses natural methods as much as possible for the identity of Nong Bua Lam Phu province's native weaving fabrics combined with contemporary fabric styles so that the new generation can access and understand the value of local weaving fabrics until it becomes popular with all ages.
3. Locally woven fabrics should be developed using pure cotton, using natural dyes instead of synthetic dyes that are toxic to the environment and cause both producers and users to have allergies that are a severe health hazard. If synthetic colors are used, relevant government agencies must supervise and provide knowledge and understanding of wastewater disposal.
4. Should improve the quality of already good patterns by creating designs that are the identity of the community's way of life, combining traditional practices with contemporary patterns by hand weaving.
5. Locally woven fabrics should improve the quality so that the material is soft, color does not fade, lightweight, well-ventilated, and can be worn in all seasons, especially in summer.
6. Relevant government agencies should coordinate with educational institutes from vocational certificates to degree levels to include indigenous weaving curriculum, innovative fabric design, etc. Order to inherit the local weaving to remain forever because nowadays, the local weaving personnel are older people and have a gap in inheriting knowledge because there is no famous person in the past. Personnel who replace the elderly personnel because if there is no successor, traditional weaving may eventually be lost.
7. Marketing strategies should be developed to promote and sell the local weaving fabrics of Nong Bua Lam Phu province to both domestic and international markets. Marketing strategies can be developed through digital platforms and social media, in addition to attending trade fairs and exhibitions. There is potential to tap into the eco-friendly market and to promote the sustainability of locally made fabrics.
8. Collaboration between weaving groups and fashion designers can lead to the creation of new and unique designs that appeal to a wider market. The combination of traditional weaving techniques with modern design can bring renewed interest in the locally made fabrics and help to sustain the weaving industry.
9. Finally, relevant government agencies should provide financial support to develop and modernize the production process, particularly in terms of technology and equipment, to increase the efficiency of the weaving process and reduce production time. This

will ultimately help to improve the competitiveness of locally made fabrics and increase the demand for them in both domestic and international markets.

In conclusion, the quality development of local weaving fabrics in Nong Bua Lam Phu Province is crucial in preserving and promoting the traditional weaving industry. The study has identified several key areas for improvement, including raw materials, personnel, pattern designs, and production processes. The recommendations presented in this paper can serve as a guide for local weaving groups, entrepreneurs, and relevant government agencies in their efforts to improve the quality and sustainability of the local weaving industry in Nong Bua Lam Phu Province. Through collaboration and innovation, the weaving industry can continue to thrive and attract a wider market while preserving its unique identity and cultural heritage.

References

- Community development office Nong Bua Lam Phu Province. (2018). Nong Bua Lam Phu, OTOP, Innovative Community of Lum Phu people. Mahasarakham: Sarakham printing.
- Eaknarajindawat, N. (2021). Supporting Factors Affecting Area Development at the Special Economic Zone Border, Mukdahan Province. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(7), 2928-2935.
- Jeamsripong, S., & Petchmee, P. (2017). Value-added products from Thai local wisdom: a case study of traditional weaving fabrics. Phitsanulok: Naresuan University.
- Khit silk cloth with an applied pattern of the provincial slogan Ban Pho Kham Khit Silk Weaving Group Nong Bua Lam Phu Province. (n.d.). Retrieved April 27, 2023, from <http://i-san.tourismthailand.org/7101/>
- Kotler, P. (1997). Analyzing Consumer Markets and Buyer Behavior. In *Marketing Management*. Evanston, IL: Northwestern University.
- McMac (2015). Native woven fabrics of the Isan people. Retrieved April 27, 2023, from http://mcmac.udru.ac.th/mcmac_files/vol3_1_3.pdf
- Nong Bua Lam Phu Province. (2021, May 28). Announcing the identity of the provincial fabric, namely Khit and Mee fabric the color is pink and has a royal lotus pattern, which is the provincial flower. Thai News Agency. <https://thainews.prd.go.th/th/news/detail/TCATG210528121908834>

- Nong Bua Lam Phu Province. (2021, October 5). Continuing to develop local fabric processing skills raise product standards and carries on local wisdom. Thai News Agency.
<https://thainews.prd.go.th/th/news/detail/TCATG211005131520218>
- Nong Bua Lam Phu: Handicrafts, the foundation of wisdom value of culture. (n.d.). Retrieved April 27, 2023, from http://www.thai-explore.net/file_upload/submitter/file_doc/105450df4304d3a73b2138211408ebcc9d335.pdf
- Nuanno, B. (1999). Principles of design. Bangkok: Chulalongkorn University Press.
- Office of the Royal Society. (n.d.). Retrieved April 27, 2023, from <http://legacy.orst.go.th/?knowledges>
- Pichayaporn, B. (2018). Strategies for increasing the value of local weaving products of the weaving group in Nongbua Laphu Province (Doctoral dissertation). Udon Thani Rajabhat University.
- Research problems of the local weaving group, Nong Bua Lam Phu Province. (n.d.). Retrieved April 27, 2023, from <https://www.gotoknow.org/posts/621876>
- Silk weaving wisdom. (n.d.). Retrieved April 27, 2023, from <https://souvenirbuu.wordpress.com>
- SUCHEEP POMO Cultural Science Hybrid Culture. (2009). Identity Concept. Retrieved April 27, 2023, from <http://sucheepost.blogspot.com/2009/05/identity.html>
- Taghipour, A., & Loh, A. (2017). Influences on brand loyalty among Thai female cosmetic consumers. People: International Journal of Social Sciences, 3(2), 43-52.
- The art of traditional weaving in Thailand today. (n.d.). Retrieved April 27, 2023, from <https://saranukromthai.or.th/sub/book/book.php?book=21&chap=3&p>
- The identity of Isan weaving fabrics: Connecting Thai fashion to international. (n.d.). Retrieved April 27, 2023, from <https://www.dip.go.th/th/category/2019-05-22-13-18-11/2022-03-17-11-16>
- Wichalai Nong Bua Lam Phu weaving fabric “The city of local weaving fashion.”
<https://mgronline.com/politics/detail/9650000026426> Wichalai

propulsion Nong Bua Lam Phu Woven Fabric
<https://nongbua.cdd.go.th/2020/07/26/mou>