

## Structure of Knowledge in the Culture of Weaving of Thai-Khmer Ethnic Group

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Received Date: 30 August 2022

Accepted Date: 21 September 2022

Published Date: 1 November 2022

**Abstract.** The study explores a knowledge structure in the weaving culture of the Thai-Khmer ethnic group. Content analysis and a content analysis form were employed to examine the data. The research population was 126 entries from four databases in Thailand, namely, Thai Journal Online (ThaiJO), Thailand Library Integrated System (ThaiLIS), Thailand Culture Research, and Digital Research Information Center (DRIC). As a result, the knowledge structure consists of two classes: 1) textile, including three subclasses and nine divisions (1) yarn preparation; silk threads, coloring, and patterns (2) weaving process; tools and supplies, weaving process, and decoration (3) textile; ikat fabrics and weaving techniques 2) the culture of weaving consists of two subclasses and six divisions (1) ways of life and the use of fabrics including daily use, ceremonial costumes, and traditional costumes (2) beliefs and the fabrics including beliefs through patterns, beliefs through the weaving process, and beliefs in using the fabrics.

**Keywords:** Structure of knowledge, a culture of weaving, Thai-Khmer ethnic group

### 1 Introduction

Community knowledge and wisdom, especially culture-related, such as values, beliefs, traditions, community practices, wisdom, culture, and art, have been recently addressed as valuable components in creating products, services, and innovations for improving countries. (Howkins, 2001; Aimkachonchai, P, 2017).

A body of knowledge in the culture of weaving is distinctive in each area due to geography, climate, environment, basic needs, and ethnicity. The aforementioned affect local people in ways of life, beliefs, culture, dressing, traditions, tools, and needs. Each ethnic group has a distinguished culture; Lawa ethnic group, women often wear Poktia, dark blue or black sleeveless shirts; So (Thavung) ethnic group,

women often wear black button-up shirts decorated with red threads, a breast cloth, and ikat or cotton sarongs. For married women, their clothing is not decorated with red thread; Thai-Khmer ethnic group, women often wear shirts and ikat sarongs in various patterns, Hol, Umprom, Unloonseem, and Sakoo. Therefore, knowledge of the culture of weaving reflects the uniqueness of a particular ethnic group (Kongmaneechatchawan, T, 2019).

Woven fabrics of the Thai-Khmer ethnic group are to be promoted worldwide under the National Strategy on diverse tourism (2018-2037) and the Northeast region development plan (2018-2022). The textiles would be included in souvenirs and cultural tourism. There are several unique features of Thai-Khmer textiles; 1) yarns are premium quality thread for a delicate and glossy fabric 2) silkworm farming which is high-quality natural farming 3) ikat weaving techniques which are wrap and weft, and these are only found in Thai-Khmer woven fabrics 4) dyeing colors which are red, yellow, black, green and blue based on Khmer's influence 5) natural dyeing process 6) original patterns; Hol, Kanaw, Umprom, Unloonseem, Labek, Samore, Chanotluek, and Sakoo.

Knowledge of the culture of weaving is essential for further developments in business, research, and education. However, most of the textile studies focused on knowledge in weaving only; for example, Phayakprakhon (2018) examined patterns and colors of fabrics, weaving groups, weaving process, ways of life and textiles, the use of fabrics, ways of passing on weaving wisdom, and factors of consumers and Keawban, Prayongtrap & Kachanipha (2019) explored mulberry plantation, yarn processing, the dyeing process, patterns, weaving techniques, weaving tools, marketing, types of fabrics, and ways to sustain silk textiles. Nevertheless, it is unable to retrieve or access knowledge because there are few studies regarding weaving culture. Moreover, people perceive that knowledge of weaving and knowledge of weaving culture is similar. In fact, knowledge of weaving includes the weaving process, textile products, and pattern designs, whereas knowledge of weaving culture reflects the use of fabrics in daily life, traditions, rituals, and beliefs. Therefore, the unclear classification might affect the information retrieval; further, the weaving culture knowledge of the Thai-Khmer ethnic group is specific, but the classification systems like Dewey Decimal Classification (D.C.) or Library of Congress Classification (L.C.) are for general classification purposes. Those categorize the knowledge of Thai-Khmer weaving culture into many sections of the library, and it might be complicated for people to collect all the information regarding the knowledge of Thai-Khmer weaving culture.

As a result, a knowledge structure of the weaving culture of the Thai-Khmer ethnic group would allow us to see groups of knowledge, principles, vocabulary, and classification clearer. The classificatory structure would be employed to categorize all related classes, subclasses, and divisions seamlessly. The knowledge would be classified systematically. Therefore, users could easily retrieve the information and apply the knowledge to further developments in products and services.

## 2 Literature Review

A classification system refers to the analysis and category of knowledge in a systematic way by ordering the information according to relationships and criteria. Thus, the information would be stored and retrieved for people to access at library systems, databases, archives, or other resources. A good classification system must be based on the knowledge category system of each field, and the information must be related to each other; as a result, people would be able to access and retrieve accurate information (Hjørland, 1994).

Zeng (2008) suggested principles of a classification system as 1) it should help to search for similar and different features of each area, 2) it should classify concepts into sets to lesson redundancy, ambiguousness, and irrelevance in keywords, 3) it should classify relationship of content which could be in hierarchy or association, and 4) it should explain properties or components of each concept for reference.

A structure of knowledge could be divided into four methods as follow (Zeng ,2008; Hodge, 2000; Tuamsook, K et al., 2561):

1. Term Lists. It is a less complicated method as it provides term lists alphabetically—for example, glossary, dictionary, and synonym rings.
2. Metadata – link model. It contains authority control functions such as authority files, directory, and index (Tuamsook, K et al., 2561, 2561)
3. Classification and Categorization. It is a method that classifies the information based on hierarchy or association, divides it from broad to specific, and creates symbols or phrases to be keywords—for instance, subject headings, taxonomies, classification schemes, and categorization taxonomy.
4. Relationship Model. It is a method that analyzes knowledge concepts and forms hierarchical relationships or associated relationships—for instance, thesaurus, semantic networks, and ontology.

The four structure systems are different in terms of classification methods. However, all methods aim to provide retrieval services to collect data effectively.

### *2.1 Research conceptual framework*

Setting a structure of knowledge in the weaving culture of the Thia-Khmer ethnic group is managing the information to classes, subclasses, and divisions. Then, analyzing the attributes of the weaving culture knowledge with the Facet Classification Approach of Spiteri (1998).

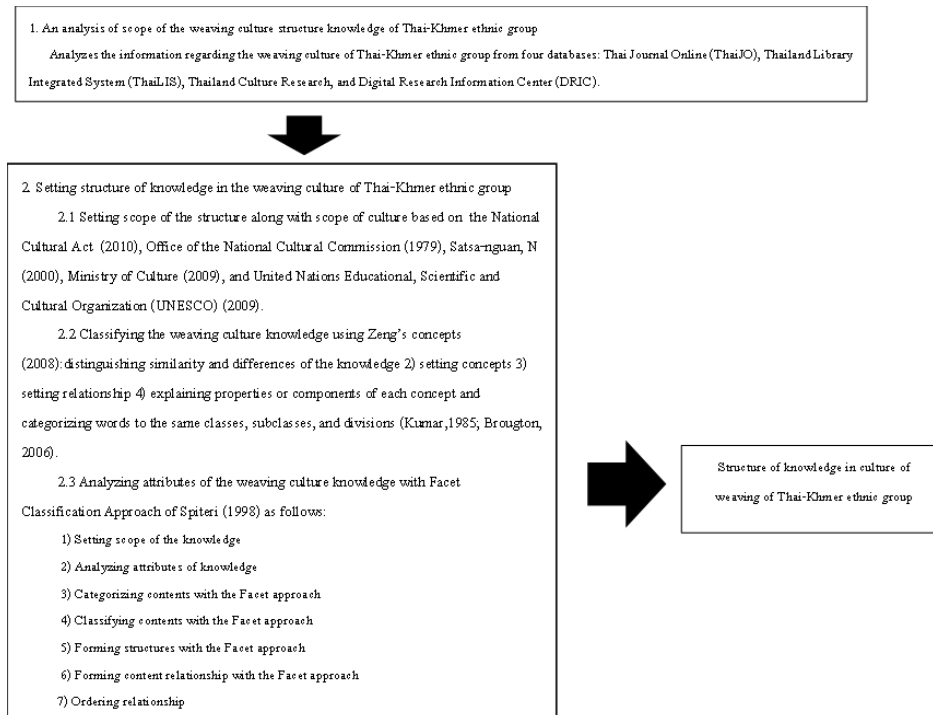


Figure 1: Research conceptual framework

### 3 Methodology

The study is qualitative research. Content analysis and a content analysis form are used to analyze concepts and terms regarding the weaving culture knowledge in four databases: Thai Journal Online (ThaiJO), Thailand Library Integrated System (ThailIS), Thailand Culture Research, and Digital Research Information Center (DRIC). There were 4,249 entries found in those databases. Then, 126 entries were selected according to the weaving culture knowledge and classified concerning the National Cultural Act (2010), Office of the National Cultural Commission (1979), Satsa-nguan, N (2000), Ministry of Culture (2009), and United Nations Educational, Scientific and Cultural Organization (UNESCO) (2009). Therefore, the information was classified the weaving culture knowledge using Zeng's concepts (2008): distinguishing similarities and differences of the knowledge, 2) setting concepts, 3) setting relationships, 4) explaining properties or components of each concept, and categorizing words to the same classes, subclasses, and divisions (Kumar, 1985; Broughton, 2006). After that, attributes of the weaving culture knowledge were analyzed with the Facet Classification Approach of Spiteri (1998) as follows: 1) Setting scope of the knowledge, 2) Analyzing attributes of knowledge, 3) Categorizing contents with the Facet approach, 4) Classifying contents with the Facet approach, 5) Forming structures with the Facet

approach, 6) Forming content relationship with the Facet approach, 7) Ordering relationship. Lastly, the researchers summarized the scope and structure of knowledge in the culture of weaving.

## 4 Result

The information security perspective developed in this article reported issues involving corporate information sources, the needs of information users for corporate users, and the corporate guidelines that permeate the entire life of the organization. The variables involved in creating a safe behaviour for the information user as well as information security from the point of view of human resource management were briefly described. Thus, it was concluded that the importance of education and organizational learning in information security issues is fundamental. While many information security initiatives are driven by information technology departments, the real reasons for the failures continue to pervade the entire organization. People are present everywhere, whether as users or as developers of information systems, and it is up to them to watch out for organizational policies and guidelines designed to maintain security. It is up to the organization and its management body to make such policies and guidelines known and to value their adoption.

### *4.1 An analysis of the Thai-Khmer culture knowledge*

The analysis included 126 entries from the four databases, which examined concepts based on keywords in research titles, subjects, contents, and terms. The mentioned above should reflect the phenomena of the Thai-Khmer ethnic group's weaving culture. There were 114 concepts and 549 non-repeated words. These could be classified into nine classes: 1) 4 concepts and 27 words regarding threads and yarn 2) 13 concepts and 100 words regarding coloring 3) 17 concepts and 81 words regarding patterns 4) 8 concepts and 113 words regarding the weaving process 5) 9 concepts and 40 words regarding textiles 6) 7 concepts and 18 words regarding clothing 7) 2 concepts and 50 words regarding fabrics in ceremonies 8) 2 concepts and 48 words regarding fabrics in traditions and 9) 5 concepts and 12 words regarding fabrics and beliefs.

### *4.2 The structure of knowledge in the culture of weaving of the Thai-Khmer ethnic group*

The information from 6.1 was then classified concerning the National Cultural Act (210), Office of the National Cultural Commission (1979), Satsa-nguan, N (2000), Ministry of Culture (2009), and United Nations Educational, Scientific and Cultural Organization (UNESCO) (2009). It was divided into two groups as follows:

1) Textiles. It is in regards to the ethnic group's weaving wisdom as it begins with producing natural threads, dyeing, wrapping, and weaving. The knowledge was classified into three subclasses and nine divisions.

- 1.1) Yarn preparation consists of two subclasses: colors and patterns
- 1.2) Weaving process consists of 3 subclasses: weaving tools, weaving process, and weaving techniques and decorations.
- 1.3) Fabrics consist of three subclasses: warp ikat, weft ikat, and double ikat.
- 2) Weaving culture. It is about ways of life, beliefs, rituals, and traditions divided into two subclasses and six divisions.
  - 2.1) The fabrics and ways of life consist of 3 subclasses: daily life clothing, ceremonial fabrics, and traditional fabrics.
  - 2.2) The fabrics and beliefs comprise three subclasses: beliefs through patterns, weaving process, and usage.

#### *4.3 The analysis of attributes of the weaving culture*

This analysis was to explore specific attributes of each class, concept, word, and relationship using Facet Classification Approach. The attributes included Things (Entities), Theory & Philosophy, Kind, Parts, Materials, Properties, Processes, Operations, Products, Agents, Patients, Space, Time. These attributes could be explained in detail as follows:

- 1) Textile class; Significant attributes of yarn preparation are (1) dyeing ingredients lists (2) Mulberry listed by provinces (3) silkworm listed by types (4) pattern lists; Significant of weaving process are (1) tools and materials list (2) weaving process list; Significant attributes of textiles are (1) fabrics listed by ikat types (2) fabrics listed by wrap ikat type.
- 2) Weaving culture class; significant attributes of ways of life and fabrics 1) fabrics listed by clothing 2) fabrics listed by rituals 3) fabrics listed by traditions; Significant attributes of beliefs and fabrics 1) belief listed by ikat patterns

According to the seven principles of the Simplified Model for Facet Analysis (Spiteri, 1998), the specific essences of the weaving culture knowledge of the Thai-Khmer ethnic group are found as follows: 1) Differences. The contents in each class are distinctive; fabrics listed by clothing, fabrics by rituals, and fabrics by traditions 2) Relevance. The knowledge is relevant; the weaving process list is relevant to the tools and materials list since we need to know the tools before weaving. 3) Ascertain ability. It helps us to understand the contents of the Thai-Khmer ethnic group clearly. 4) Permanence. It allows us to see the standard terms; permanent names of Mulberry, silkworm, tools, and materials, which are widely understandable. 5) Homogeneity. Since all significant attributes state their uniqueness, we could easily explore each set of knowledge 6) Mutual exclusivity. This principle shows original concepts of Mulberry types, silkworm types, tools, and materials, and 7) Fundamental categories. All contents share the same concepts; therefore, we could apply them to practice effectively.

Thus, a knowledge structure of the weaving culture of the Thai-Khmer ethnic group allows us to deeply see concepts, words, and relationships in terms of classes, subclasses, and divisions. The structure of knowledge also reflects the specific contents and identity of the ethnic group.

The researchers examined 126 entries, analyzed the scope and knowledge structure of the weaving culture of the Thai-Khmer ethnic group, then classified them into two classes: 1) textiles as yarns, patterns, tools, weaving process, and fabrics; 2) weaving culture as ways of life and fabrics, and beliefs and fabrics. Therefore, the scope of the weaving culture is specific and unable to use international classification systems such as Dewey Decimal Classification (D.C.) or Library of Congress Classification (L.C.) to categorize the particular knowledge. Panommit, P (2017) mentioned that textile knowledge is specific since there are technical terms, so the general classification systems are incompatible with textile knowledge. It would be better if there was a specialized structure of knowledge in textiles to set ontology, classes, sub-classes, properties, and the relationship between classes.

Moreover, the researchers employed the seven steps of the Simplified Model for Facet Analysis (Spiteri, 1998): 1) Setting scope of the knowledge, 2) Analyzing attributes of knowledge, 3) Categorizing contents with the Facet approach, 4) Classifying contents with the facet approach 5) Forming structures with the Facet approach 6) Forming content relationship with the Facet approach 7) Ordering relationship. The analysis manages the information into 13 groups: Things, Theory and Philosophy, Kind, Parts, Materials, Properties, Processes, Operations, Products, Agents, Patients, Space, and Time. It was found that there were three significant attributes of yarn class 1) names of ingredients to dye threads, 2) names of Mulberry trees 3) names of silkworms. The pattern class consists of names of fabric patterns. The tools and materials class consists of names of looms. The weaving process class consists of names of the weaving process. The textile class consists of names of ikat fabrics. Ways of life and fabrics class consist of names by clothing, names of fabrics by rituals, and names of fabrics by traditions. Finally, the belief and fabrics class consist of beliefs by fabric patterns.

Thus, using the facet approach, the analysis of unique attributes demonstrates specific attributes. Aimhachonchai, P (2018) also mentioned that using the facet-analytical approach is another method to categorize and classify unique attributes of the specific information. This approach is flexible in classifying the data to fit each context. Moreover, Chongchohore, C (2017) supported that scope of knowledge structure needs literary warrants by setting scopes of contents, setting index terms to obtain the principle of containing relation, and then categorizing content from general to specific reflects specific attributes.

## 5. Conclusions

The analysis of cultural knowledge's scope and structure regarding Thai-Khmer textiles could be divided into two classes, namely, 1) textiles, including silk threads, patterns, weaving tools, weaving process, and fabrics, and 2) textile culture, including ways of life related to textiles and beliefs related to textiles. Consequently, structuring the Thai-Khmer textile knowledge into classes, sub-classes, and divisions and employing the facet analysis help us see the insights of Thai-Khmer textiles: distinctive

attributes and relationships of each class. Therefore, we could apply the information in teaching, research, and business conveniently.

It is recommended that the information could be further developed into an ontology to define keywords for meanings, attributes, features, examples, and relationships of each concept. Moreover, the ontology could create common keywords for users to share knowledge and get accurate retrievals about Thai-Khmer textiles effectively.

### **Acknowledgments**

This article was a part of a graduate research grant supported by the national research council of Thailand for the year 2020.

### **References**

- Aimkachonchai, P. (2017). Developing knowledge Organization System Framework For Thai Cultural Knowledge Domain. [Doctoral Dissertation, Khon Kean University]. Khon Kean University Library.
- Broughton, V. (2006). The need for a faceted classification as the basis of all methods of information retrieval. *Aslib Proceedings: New Information Perspective*, 58(1/2), 49-72.
- Chongchore, C. (2017). Ontology development for indigenous rice knowledge of Thailand. [Doctoral Dissertation, Khon Kean University]. Khon Kean University Library.
- Hjørland, B. (1994). Nine principles of Knowledge organization Retrieved November 26, 2017 [https://www.researchgate.net/profile/Birger\\_Hjørland/Nine-Principles-of-Knowledge-Organization.pdf](https://www.researchgate.net/profile/Birger_Hjørland/Nine-Principles-of-Knowledge-Organization.pdf)
- Hodge, G. (2000). *Systems of Knowledge Organization for Digital Libraries: Beyond Traditional Authority Files*. Washington, DC: The Digital Library Federation Council on Library and Information Resources
- Howkins, J. (2001). *The Creative Economy: How People Make Money from Ideas*. New York : Penguin.
- Keawban, Sawas Prayongtrap, Yubha & Udomtawi, Kachanipha. (2019). The Wisdom of Original Silk Weaving of Keayai Community in Muang District, Surin. *Academic MCU Buriram Journal*, 4(1): 71 – 85.
- Kongmaneechatchawan, T. (2019). Development of information systems about data storage of folk wisdom in weaving Lock No.17 Premruetai Community Bangkok. *Veridian E – Journal*. 12(2): 201 -222.
- Kumar, K. (1985). *Theory of Classification*. New Delhi: Vani Educational Book.
- Panommit, P. (2017). *Ontology Development for Knowledge of Lanna Textiles*. [Master's degree thesis, Chiang Mai University]. Chiang Mai University Library.
- Phayakprakhon, Maywadee. (2018). Folk Handweaving Silk in Surin Province. *Institute of Culture and Arts Journal Srinakharinwirot University*, 18(1): 94 – 105.
- Satsa-nguan, N. (2004). *Physical Anthropology: Evolution in physical and culture*. Bangkok: Chulalongkorn University.



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- Spiteri, L. (1998). A Simplify Facet Analysis Model. *Canadian Journal of Information and Library Science*. 23, 1-30. Retrieved January 25, 2009, from <https://courses.washington.edu/is530/>
- Tuamsook, K. et al. (2018). *Digital Humanities Research*. Khon Kean: Khon Kean University.
- Zeng, Marcia Lei. (2008). Knowledge organization system (KOS). *Knowledge Organization*. 35(1): 160 -182