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# Contents

	<i>page</i>
Message from President of Kasem Bundit University.....	B
Committees .....	D
List of Reviewers .....	F



## Track I: Science and Engineering



### **Agricultural Science, Engineering and Related Areas**

Technical Challenges of Quality Function Deployment for a Sustainable Agricultural Machinery Development: A Literature Review Watchanachai Joompha and Nalin Pianthong .....	1 - 13
The Optimized Grey Verhulst Model for Cultivated Area and Economic Crops of Thailand Chalermchai Puripat and Sittiporn Yodnil .....	14 - 31

### **Computer Science and Engineering**

A Systematic Review of Gamification Research in Healthcare Context Sakchai Muangsrinoon and Poonpong Boonpharm .....	32 - 52
Classification of Red Tilapia Fish Via Support Vector Machine Urachart Kokaew, Kasama Wannaphom and Ratthapol Skolchai-phaison .....	53 - 61

### **Electronics and Telecommunication Engineering**

An Application of High-Pass Filter for Water Level Measurement with Semi-Cylindrical Capacitive Sensor (SCCS) Thosapol Manasri, Somchat Sonasang and Danupat Duangmalai .....	62 - 70
--	---------

### **Other Relevant Areas**

Contractors' Work Abandonment in The Ministry Of Agriculture And Cooperatives (MOAC) Construction Projects Boonruk Vanborsel and Kumpon Subsomboon .....	71 - 77
---	---------



### Arts and Humanities

Banana with Sticky Rice Package Design: The Inheritance of Local Intellect for Encouraging a Strong Community Economy Sataporn D.Na-Chumpee, Thiyada Thavewat, Vanida Saengdech, Pronpan Kruaroonrat and Wipoo Sakoat .....	78 - 89
Graphic Identity Design Of Klong Suan 100 Years Market Community Sujira Thanomporn and Pheeraphon Changjaikla.....	90 - 103
Structure Meaning Names of OTOP Amonwadee Laokhetkit and Wasana Kanchanakhuha.....	104 - 113
The Community Product Development in Sangkaracha Temple for Sustainability Sataporn D.Na-Chumpee and Chalermchai Puripat.....	114 - 119
The Method Creating Words for Thai Lipstick Color Names Sarawadee Manoosawet and Supawan Kaewpongkok .....	120 - 126
The Study of concept design and Western Styles in interior Architecture of the Royal Monasteries during the Reign of King Rama V Tanaporn Dasananda.....	127 - 140
The Translating Methods of the Chinese Movie Names into Thai Supawan Kaewpongkok and Qin MeiLing.....	141 - 146
Written Reflections and Learning Development: Perceptions of Pre-service Efl Teachers Rosukhon Swatevacharkul.....	147 - 166

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- Economics and Finance
- Nurse
- Psychology
- Social Science
- Sport Science
- Other Relevant Areas



## Graphic Identity Design of Klong Suan 100 Years Market Community

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### ABSTRACT

This research aims to study the identity of Klong Suan 100 Years Market Community. The analyzed data was from documents and field information. The result showed that the identity of Klong Suan 100 Years Market Community is coming from the communication as the uniqueness of culture and the life style of this community, with design works by using character design. As the result, it was found that the designing work has reflected to the identity of Klong Suan 100 Years Market Community as the excellent standard level as well as showing the good standard for the overall of designing works to support the identity of this community.

*Keywords: Graphic, Identity, Symbol.*

### 1. Introduction

A symbol, used to symbolize and signify a thing, can be in forms of a picture(s), a letter(s), an utterance(s) as well as a gesture(s). Through use of a symbol, a message sender and a message receiver can sometimes have a mutual understanding, although being from different languages. A character (such as a person, an animal, or a thing) is one type of a symbol. It is presented in a form of a cartoon(s). A character always applied in businesses can provide a marketing effect. It can also beneficial to a business(s), a product(s), as well as a service(s). A character can be used to enhance a good image of a product. A good example of a good use of a character(s) is Line. This has resulted in brands or companies realize importance of a use of a character(s) and extensively use it as a tool for public relation. Moreover, a character(s), itself, can become a product or a souvenir.

Owing to an ecotourism boom in Thailand, there have been a lot of historic markets created. A lot of communities especially communities with historic buildings have been trying to turn themselves as tourist attractions. Like other historic markets, Klong Suan Market, located on banks of Pravetbureerom canal, has been a market since the reign of King Chulalongkorn of Thailand. Traditional and original ways of life can be seen in this market. More than 100 historic wood buildings in the market are placed by the banks of the canal. They have lasted for more than 100 years and their structures have not even been changed. With a division from the canal, the market is in 2 provinces: Tumbon Klong Suan, Amphoe Bangbo, Samutprakarn Province and Tumbon Teparaj, Amphoe Baan Po, Chacheongsao Province, Thailand. The market is known as ‘Talad Klong Suan Roi Pee or A Hundred Year Klong Suan Market’. The locality tries hard to let people know the market as an ecotourism attraction. [1] Recently, there have been an increased number of foreign tourists visiting the market. Showing an identity of the locality is a must and significant. A graphic work can be also used to represent an identity of a locality. It can help signify its locality way of life. The locality can be remembered through a use of a graphic. A character(s) is a part of a graphic. It can signify an identity of a locality well.

Accordingly, the researchers realize a significance of a graphic design to enhance the identity of Klong Suan 100 Year market through a use of an electronic sticker.

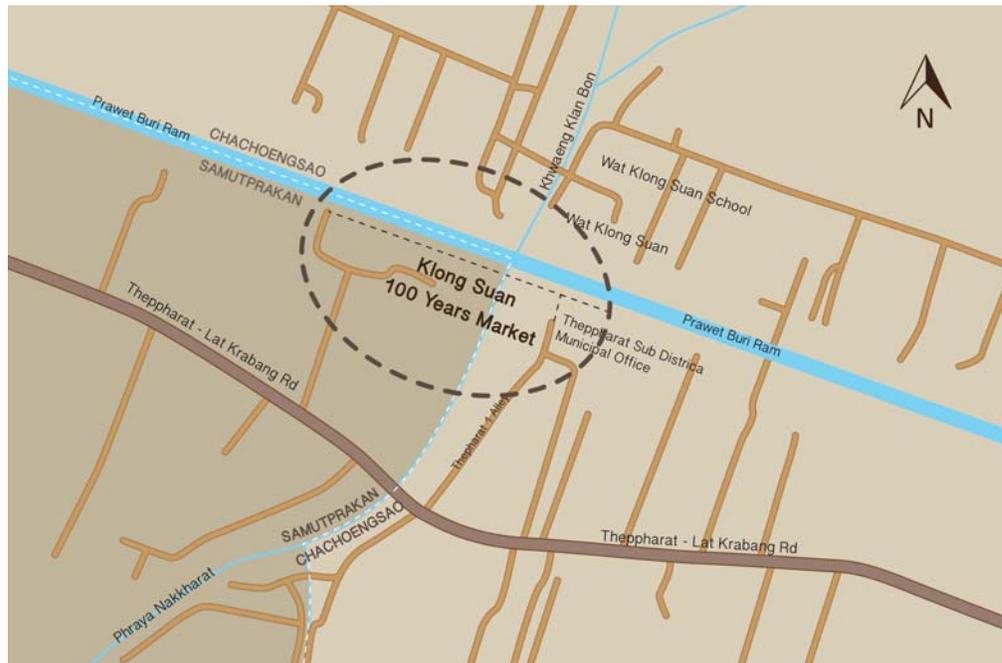


Figure 1 A map of Klong Suan 100 Year Market

## 2. Research Objectives

1. To study and analyze the local identity of Klong Suan 100 Year market
2. To design a character signifying the identity of Klong Suan 100 Year market

## 3. Research Conceptual framework

This research emphasizes studying graphic designing factors, creativity, as well as the identity of Klong Suan 100 Year Market all of which influence on design of a character reflecting the identity of the market, locality, and local way of life. A theoretical framework to be used is shown in Pic2

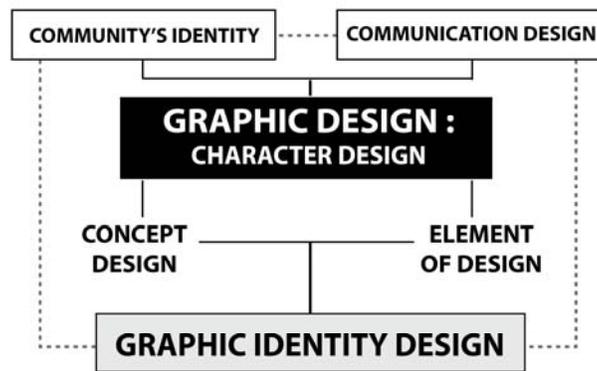


Figure 2 Research Conceptual framework

A graphic design is a creative process which is used for communication. It is a perfect combination of ideas, arts, technologies as well as information and communicated to medias. A graphic design mainly comprises 2 things - a picture and letters. A graphic designer applies either skills, theories, principles, or process to enhance its communicative effectiveness. A graphic can be in either 2 dimensioned or 3 dimensioned graphics. Hence, the researchers gathered and analyzed data and then designed a graphic to systemically communicate ideas and express our creativity. [2]

#### 4. Research Methodology

Our methodology is as followed

1. Information gathering: this process can be divided into 4 main parts. They were;
  - 1.1. Part 1: Graphic Design
  - 1.2. Part 2: Study significant information about Klong Suan 100 Klong Suan 100 Year Market (such as its physical information, history, way of life, local economic, arts, as well as its culture and tradition)
  - 1.3. Part 3: The identity of Klong Suan 100 Year Market
  - 1.4. Part 4: A design of a character
2. In-depth Interview: discussing with key Informants. The key informants were purposively randomed from Samutprakarn as well as Chacheongsao provinces. All of them were asked about the identity of the market. The received information from the informants was ten applied as a primary source for a graphic design. The results of the analysis can be categorized into 7 aspects: ways of life, nationality, holy things, architectures, paintings, crafts, and foods.
3. A graphic design: this process can also be divided into 4 main steps. They were
  - 3.1. Informational gathering and analysis
  - 3.2. Sketch design
  - 3.3. Production: a sketch design was used to create a character with 16 electronic stickers representing the local identity of Klong Suan 100 Year Market. Adobe Illustrator and Adobe Photoshop were both utilized during this process.
  - 3.4. Saving data: the design was then saved in digital format.
4. Quality Evaluation: the character with its 16 electronic stickers was evaluated by 5 local and graphic design specialists.
5. Data Analysis and improvement: the designs were then improved according to specialists' recommendations.
6. Satisfaction Evaluation: this process was done by asking 30 visitors all of whom were randomly selected.
7. Conclusion and Discussion: the researchers summarized and discussed the findings by applying statistical data: rating scale.

## 5. Results

In this research study, the analyses can be divided into 3 main parts. They are...

### 5.1 Part 1: A data analysis (before designing)

1. A data analysis of the local identity of Klong Suan 100 Year Market community was applied for designing a graphic. In this analysis, 7 aspects of the community were revealed.

They included

- 1.1. Ways of life: lives by the canal and historic market community
- 1.2. Nationalities: Buddhist, Muslim, and Chinese
- 1.3. Holy Things: Klong Suan God
- 1.4. Architectures: Klong Suan Buddhist Temple (Wat Klongsuan), Peng Ang Tua Chinese Shrine, Al-watoneeyah Muslim Masjid and 2 storey wood commercial houses.
- 1.5. Painting: a historic painting in Peng Ang Tua Chinese Shrine
- 1.6. Crafts: basketries and tin toys
- 1.7. Local foods: traditional Thai coffee (Uncle Lee), Chinese sausages (Uncle Ngin), Tung Thong Thai snack, Bu Lan Dan Mek, and Fresh Thong Muan.

From the interviews and analysis, the most mentioned identity of Klong Suan 100 Year Market was lives by the canal, a historic market community, Thai coffee (Uncle Lee), Chinese sausages (Uncle Ngin), Tung Thong Thai snack, Bu Lan Dan Mek, and Fresh Thong Muan.

2. Character used for communication between humans is creatively designed and always inspired from things around. A character consists mainly of 2 parts: a signified and a signifier. A message receiver can understand meaning of a character when connecting a signified with a signifier. Understanding a character must take culture and environments into consideration as well. [3] According to character design specialists, the researchers found that a memorable character should be cute and contain few simple lines and few colors. The appropriate proportion of a character should be 1:2 (1 head and 1 body). A character's action should be friendly to create a memorable effect. A character was not necessary to be

a human, it can be an animal, a plant, or a thing depended on an identity of a place. In terms of a character's style, it should be a 2 dimensioned character with simple lines since a good character should effectively represents a brand.

## **5.2 Part 2: The Design**

From the analysis (before designing), the researchers specified and designed a graphic to enhance the identity of Klong Suan 100 Year Market.

### 1. Idea Concept

The researchers gathered data, theories, and concepts for a graphic design to enhance the identity of Klong Suan 100 Year Market. We created a character in form of an electronic sticker.

#### 1.1. Color

A color can be used to represent an organization. It is well applied to be remembered. Hence, to set the identity, a designer should use an identity color with some other colors. One identity color with few other colors will provide flexibility for the design but maintain a graphic's identity. [4]

As a result, from the analysis, identity colors of Klong Suan 100 Year Market were lives by the canal, a historic market community, Thai coffee (Uncle Lee), Chinese sausages (Uncle Ngin), Tung Thong Thai snack, Bu Lan Dan Mek, and Fresh Thong Muan. All of those became an underlying reason that the researchers applied four main colors each of which can create emotional effects. [5] The 4 colors used for the design consisted of;

1.1.1. Bu Lan Dan Mek green : #00a79d (c79 m11 y45 k0)

1.1.2. Lives by the Canal brown : #f0cba2 (c4 m21 y38 k0)

1.1.3. Tung Thong Thai snack yellow : #fac600 (c3 m21 y100 k0)

1.1.4 Traditional Thai coffee dark brown : #594a42 (c55 m60 y65 k40)

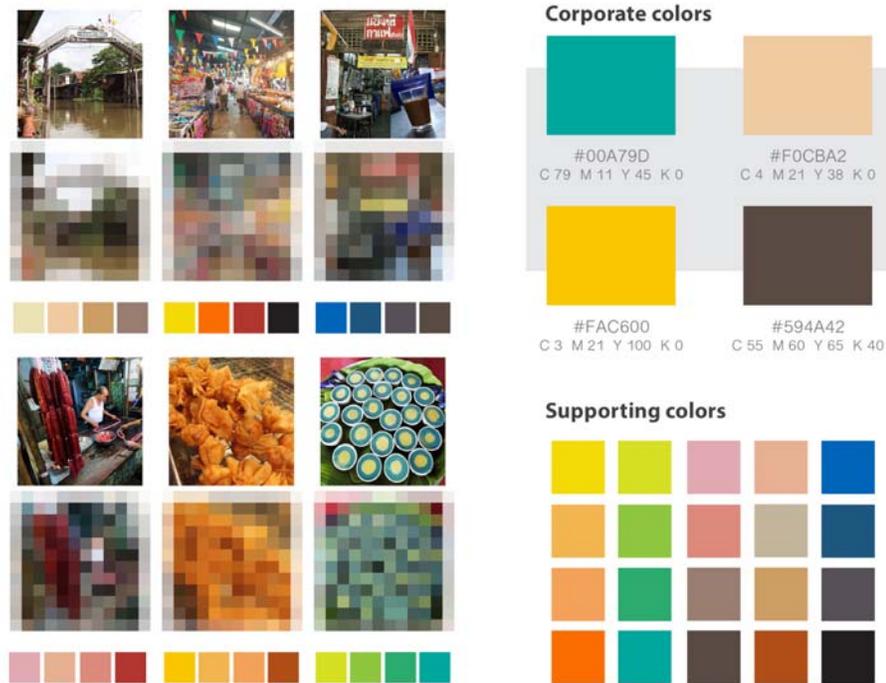


Figure 3 A Color Analysis from the Identity of Klong Suan 100 Year Market

## 1.2 A character

The design of a character was inspired by the identity of Klong Suan 100 Year market. To be appropriate and be able to clearly represent the local identity, the character was a combination of the local identity i.e. lives by the canal, a historic market community, traditional Thai coffee, Chinese sausage, Tung Thong Thai snack, Bu Lan Dan Mek Thai sweet, and Fresh Thong Muan. In our opinion, all of them, in form of electronic stickers, could reflect the image of the locality, is easy to understand and is well-known. The researchers set a color tone which was from an analysis of the identity of the market. However, the researchers found that there were two ways to design the character.

1.2.1. Using a human cartoon: a shopkeeper, a merchant, a boat rower, a villager, or a tourist

1.2.2. Using the identity of the market:

1.2.2.1. Food: Fresh Thong Muan, Bu Lan Dan Mek thai sweet, Tung Thong Thai sanck, or Traditional Thai coffee.

1.2.2.2. Things: souvenirs, clothes, or tin toys



Figure 4 The design of a character by using a human cartoon to represent lives by the canal at the historic market and visitors

Details: Friendliness, Smiles, Welcoming gestures, Local costumes, Hat, Local life styles

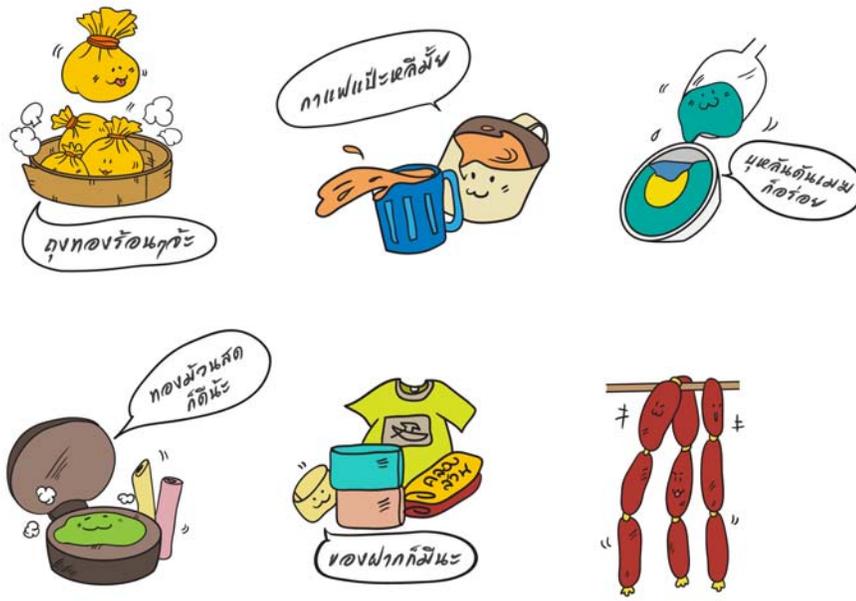


Figure 5 The design of a character by using food or things cartoon

Details: Friendliness, Smiles, Food shapes, Cuteness

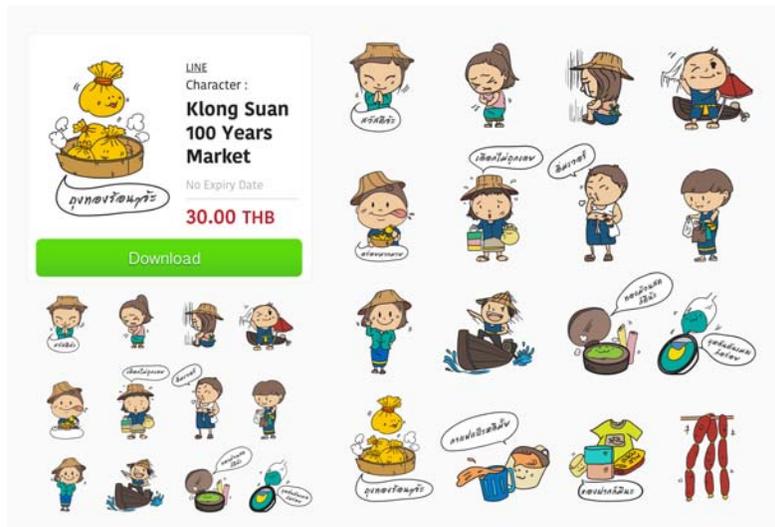


Figure 6 The design of the Character to Create Electronic Stickers of Klong Suan 100 Year market

### 5.3 Part 3: A design quality evaluation

1. From the evaluations of the 5 specialists, all agreed that a character (in form of electronic stickers) was appropriate, interesting, attractive, unique, easy to remember, can clearly communicate its meaning, can well represent the identity of the locality, and can be used to publicize the community.

2. the evaluations from the 5 specialists is showed in the table 1

**Table 1 Average scores and Their Standard Deviations of the Evaluations of the Design of the Character from the Specialists**

Aspects	Mean	SD.
1. Ability to reflect the local identity	4.85	0.30
2. The design of the graphic	4.53	0.12
3. Creativity	4.90	0.30
4. Beauty	4.44	0.19
5. Applicability	4.90	0.30
6. Communicability	4.68	0.28
7. Ability to enhance the local identity	4.44	0.25
<b>Average Mean</b>	<b>4.67</b>	<b>0.19</b>

As shown in Table 1, the researchers found that the average scores are 4.67 (excellent). Both creativity and applicability aspects are 4.90 (excellent). Ability to reflect the local identity, communicability aspects, and the design of the graphic aspects are 4.85, 4.68 and 4.53 (very good) respectively. Beauty and ability to enhance the local identity aspects are 4.44 (good).

3. The evaluations from 30 visitors is showed in Table 2

**Table 2 Average scores and Their Standard Deviations of the Satisfaction Evaluations of the Design of the Character from the 30 Visitors**

Aspects	Mean	SD.	Satisfaction Levels
1. Reflection of the local identity	4.62	0.30	Very Strong
2. The design of the graphic	4.33	0.12	Strong
3. Creativity	4.58	0.46	Very Strong
4. Beauty	4.24	0.12	Strong
5. Applicability	4.55	0.30	Very Strong
6. Communicability	4.68	0.30	Very Strong
7. Ability to enhance the local identity	4.20	0.51	Strong
<b>Average Mean</b>	<b>4.45</b>	<b>0.39</b>	<b>Strong</b>

As shown in Table 2, the researchers found that the average satisfaction level is at 4.45 (strong). Communicability aspect with 4.68 (the highest) implies that the visitors feel very satisfied. Ability to enhance the local community, creativity, and applicability aspects are 4.62, 4.58, and 4.55 respectively. The design of the graphic, beauty, and ability to enhance the local identity aspects are 4.33, 4.24, and 4.20 respectively.

## 6. Discussion

From the analysis, the researchers designed a character to be used as electronic stickers. Both researchers applied color use and designing principles to create the character. The researchers found that an appropriate ratio for the character is 1:2. The character should express friendliness and have an identity which can represent a brand. The color and other details of the character should be easy to remember. This is in line with Cultural Capital Theory of Pierre Bourdieu stating that capital does not only mean money but it can be in forms of social, wisdom, and cultural capitals. His idea supports semiotic theory viewing that all things around are relationships between a signifier and a signified. This can link with identity theory which is an idea about individuality. [6] The design of the character applied the identity of Klong

Suan 100 Year market such as lives by the canal, a historic market community, local foods and visitors. Since the community is an ecotourism attraction. The design of the character should be able to apply as other products.

From the specialist evaluations, it can be concluded that since the character can help create a good image, it should be able to communicate some stories. This is in accordance with Ong-ad Nuseewor [7] saying that a graphic design is significant for presenting an identity, creating good images, trusts, and improving economics. [8]

## 7. Recommendations

From problems occurring during our study, the researchers found that we should apply a human cartoon as the character to make visitors realize the identity of Klong Suan 100 Year Market. This can also sustainably help develop the place to be a sustainable ecotourism attraction. The researchers would like to provide some recommendations. They are ...

1. Before designing a character, the designer should well study history, cultures, and arts of a place. This will help designers to design a character effectively.

2. The researchers think that the designing processes applied in this study can be applied with other communities. Since each locality has its own identity, designers should realize identity of each locality

3. A graphic design should be used through a lot of medias to make target audiences be able to remember it. The graphic design could be used to produce souvenirs as well.

4. Further studies for other localities should be conducted. Since these will make other localities realize about significances of their local identity.

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## References

- [1] Patcharin Jungprawate. (2017). “Community Needs in Developing Potential for Conservation Tourism Management : A Case Study of Klong Suan 100 Years Old Market, Bang Bo District, Samut Prakan Province”. **Journal of Thai Hospitality and Tourism**. Vol.12. (Issue 1.) : Pages 36.
- [2] Kanin Morakotjinda. (2015). **Research and Development of A Character for Public Relations : Case Study Development for Development of Thai Traditional and Alternative Medicine**. Master of Fine Arts (Design Innovation). Faculty of Fine Arts, Srinakharinwirot University.
- [3] Thongchue Khiatthong. (2005). **Symbol Design: LOGO Trad Mark Symbol**. Bangkok: Siprapa Publishing.
- [4] Phakdee Tuansiri. (2013). **A Reflection of Muslim Culture in Thailand through Graphic Design**. Master of Fine Arts (Visual Communication Design). Faculty of Decorative Arts, Silpakorn University.
- [5] Eiseman. (2000). **Pantone guide to communicating with color**. USA: Grafix Press, Ltd.
- [6] Piboon Wajittragum. (2009). **The Application of Samut Songkhram Identity for Tourism Signage**. Research Report, Faculty of Industrial Technology, Suan Sunandha Rajabhat University.
- [7] Ong-ad Nuseewor. (2012). **Environmental graphic design for Maha Sarakham province**. Master of Fine Arts (Visual Communication Design). Faculty of Decorative Arts, Silpakorn University.
- [8] Thammathorn Srisureepaisan. (2012). **Graphic identity design of Samutsakhon province**. Master of Fine Arts (Visual Communication Design). Faculty of Decorative Arts, Silpakorn University.

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