

## Chapter 7

# Developing Forecasting Model in Thailand Fashion Market Based on Statistical Analysis and Content-Based Image Retrieval

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### ABSTRACT

*Traditional trend forecasting process in Thailand fashion industry was challenged by a fast fashion. In this paper, the Content-Based Image Retrieval (CBIR) technique is utilized for retrieval of a fashion trendsetter in fast fashion influence. Firstly, six fashion theories were implemented as 12 variables affecting the trendsetter. Cluster analysis, and factor analysis approach were used to find out the source of a fashion trendsetter as well. Cluster analysis separated all samples into three groups with different fashion ways. Moreover, factor analysis technique grouped all variables into three important factors. From such techniques, Internet media clearly is the best source of a fashion trendsetter. In the authors' model, traditional forecasting sources were added up with a fast fashion influence from CBIR. Then, the CBIR was evaluated in terms of efficiency compared with a real fashion expert in the Thai fashion industry. From statistical test, spatial color distribution yields high efficiency in selecting similar fashion style as a fashion expert.*

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## **1. INTRODUCTION**

Thailand is a favorite destination for garment buyers around the world. The textile industry in Thailand is a major industry. From January to August 2014, the exporting volume of textiles and apparels reached 4,999.77 million USD (“Textile information”, 2014). Textile exporting in Thailand received twelfth ranking from the total exporting volume in the world. Thailand is a land that has all the processes of the textile supply chain, from yarn, weaving, knitting, dyeing, printing and producing the finished garments for retail. In 2012, the textile industry hired about a workforce of 1.023 million people, which are 19% of all labor in Thailand’s manufacturing industry (“Annual Report 2014”, 2014). In a big city like Bangkok, every street has at least one garment production house.

Most textile industry in Thailand is labor-intensive. Both fabric manufacturers and clothing houses in Thailand are Original Equipment Manufacturer (OEM) rather than Own Design Manufacturer (ODM). This causes a significant problem for the entire textile industry when The labor cost rises. Moreover, although Thailand has a very strong textile supply chain, Thai international fashion brand does not exist.

### **1.1. Government Support**

Thailand’s government knows about this problem and tries to support the textile industry. Many national institutes have been set up to support the textile industry. Thai Textile Institute (THTI), one of the federal institutes, has a mission to develop the entire textile industry. Many other design institutes have also been set up to fill the void including Bunka fashion academies, SHARE organization, Chanapatana International Design Institute, Academia Italiana Fashion and Design Institute, Pattern It and Raffle International College (“Textile information”, 2014).

Nowadays, the government focuses on developing design sector to move the Thai fashion industry from OEM to ODM.

### **1.2. Big Gap: Fashion Design Limitation**

Although Thailand has many fashion designers, schools, and institutes, there is some limitation with the fabric sourcing. That is the absence of connection between fabric suppliers and Thai fashion designers. Most Thai fashion themes focus on pattern design, but not color design, printing design or fabric texture design. Fabric on the Thai market does not possess a wide variety of colors, printing or textures that matches to the designers’ ideas. Fabric suppliers supply only standard fabric or some stock of fashionable fabric which is brought from abroad. When Thai designers want to design fabric in fashion collections, they will outsource by shopping for fabric in the Chinatown area to find fabrics that match their design. However, they cannot find the fabric that has the distinctive style that matches their design or fashion trends, resulting in the need to change the design altogether. If fashion design in Thailand is to ever make a big leap, the connection between the fabric supplier and designer is very important to establish.

For fabric industry, especially weaving industry, the minimum production for weaving fabric per lot is high because of the sizing process to strengthen the yarn when weaving needs minimum yarn to production (“Cotton: From Field”, 2015). Nonetheless, the normal design of the fashion houses in Thailand is about 300 to 500 pieces per design, using only 200 to 400 yards of fabric per production. Fashion design production is small, but the fabric production is soaring. If a textile factory makes a special textured

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