



# **THE SHELVING OF VERNACULAR MART**



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by

**CHANG YUE**

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Assoc. Prof. Pisrapai Sarasalin  
Examination Committee Chairperson

Prof. Eakachat Chanurairat  
Member

---

Assoc. Prof. Paijit Ingsiriwat  
Member and Advisor

Approved by Graduate School

(Asst.Prof.Plт.Off. Vanee Sooksatra, D.Eng.)

Dean of Graduate School

August 31, 2023

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Chang Yue  
Researcher

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### Abstract

In the retail industry, shelf display is an important marketing strategy which can not only attract consumers' attention, but also influence their purchasing behavior. As an important part of the retail industry, local supermarkets have an important impact on the sales and profits of shelf display. Therefore, it is of great practical significance to conduct research on the shelves of local supermarkets.

The purposes of this dissertation were to gain insight into the shelf display and design of a local supermarket and to analyze its impact on consumer buying behavior, product sales and profits. By studying the effect of shelf display, the study can provide improvement suggestions for supermarkets around the world to optimize shelf strategies and increase sales.

(Total 23 pages)

Keywords: Lay out, Shelving, Customers, Encourage, Culture

Student's Signature ..... Thesis Advisor's Signature .....

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# Chapter 1

## Introduction

### 1.1 Background

Shelving design has gone through some important developments and trends over the past few years, here are some of them:

**Data-driven design:** With the advancement of technology and the popularity of data analysis, shelf design increasingly relies on data-driven methods. By analyzing sales data, customer behavior and market trends, designers can more accurately determine the location, layout and quantity of product displays. Data-driven design can help supermarkets better understand customer needs, optimize product display, and improve sales results.

**Personalization and customization:** Consumers' demand for personalization and customization is increasing, and shelf design is also adapting to this trend. Supermarkets have begun to adopt adjustable and customizable shelf systems to suit the size and display needs of different products. In addition, some supermarkets are also using digital technology and interactive interfaces to provide customers with a personalized shopping experience, such as recommending products based on customers' purchasing history and preferences.

**Sustainability and environmental protection:** Sustainability and environmental protection have become important concerns in today's society. Shelf design is also moving in a more environmentally friendly direction. Supermarkets are starting to use recycled materials for their shelves to reduce their environmental impact. In addition, some supermarkets also reduce energy consumption and waste and improve resource utilization efficiency by optimizing shelf layout and display methods.

**Introduce new technology:** The introduction of new technology has had a positive impact on shelf design. For example, supermarkets have begun to use sensors and smart systems to monitor the inventory and sales of products on the shelves, so that they can replenish and adjust the display in time. In addition, virtual reality and augmented reality technologies have also been applied to shelf design to help designers better visualize and simulate different display schemes.

**Multifunctional and experience-oriented:** shelf design is no longer just a tool for product display, they are also endowed with more functions and experience-oriented. Supermarkets have begun to combine shelf design with digital screens, interactive interfaces and information displays to provide customers with more information and interactive experiences. In addition, some supermarkets also connect shelf design with social media and online shopping platforms to provide more shopping choices and convenience.

In general, shelf design is currently developing in the direction of data-driven, personalization, sustainability, new technology application and multifunctional experience orientation. These developments aim to increase sales effectiveness, meet consumer demands, and create more engaging and innovative shopping experiences.

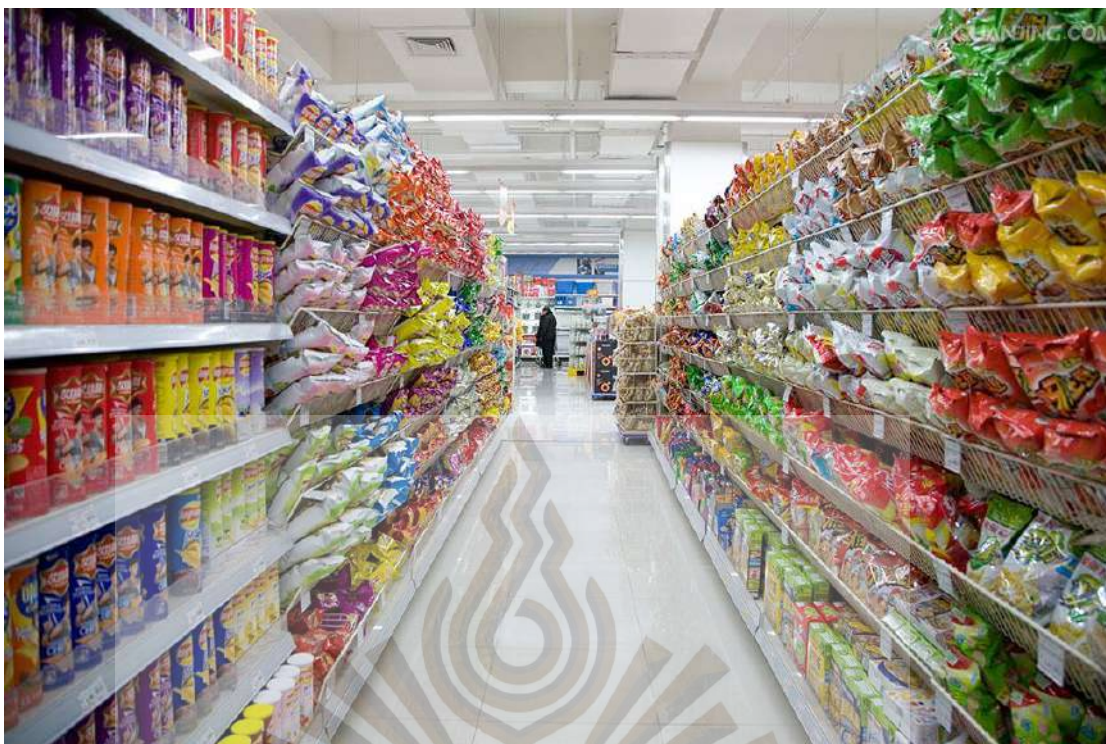


Figure 1.1 Good shelving 1

Source: Wang, 2022



Figure 1.2 Good shelving 2

Source: Researcher



Figure 1.3 Good shelving 3

Source: Li, 2022



Figure 1.4 Good shelving 4

Source: Researcher

## **1.2 Research Objectives**

### **1.2.1 Customer Behavior and Preferences:**

- 1) Most customers pay attention to the product display and promotion in for mation on the shelf when shopping.
- 2) Customers are more inclined to buy products that are located in the middle of the shelf and at eye level.
- 3) Specially marked or promoted products are more likely to attract customers' attention and prompt them to buy.
- 4) Customers are sensitive to a product's packaging, labeling, and price and will consider these factors in their purchasing decisions.

### **1.2.2 Shelf layout and product display:**

- 1) Reasonable shelf layout and product display methods can improve product visibility and sales potential.
- 2) Customers are more likely to purchase products located in the shelf positions they frequent.
- 3) The clarity of product assortment and positioning has a significant impact on customers' purchasing decisions.
- 4) Customers have certain preferences for the order in which products are arranged on the shelf, such as by brand, price or function.

## **1.3 The Shelving product analysis**

A good shelf display will prompt us to spend in local retail stores. It is estimated that this shelf design system will increase sales by 30%. At the same time, we must make clear statistics on the front and back of the shelves, and also conduct serious surveys in the market, asking our consumers what products they are most interested in and need most, and how they like to sell them. Bringing it into product promotion, it is very

important to find a way that the public likes to hear and see.



## **Chapter 2**

### **Customers and Users analysis**

#### **2.1 Environmental protection material**

Common observations and research findings about the adverse effects of work stress on people.

Health problems: Work stress can lead to physical and mental health problems. According to a study by the American Psychological Association, chronic work stress may increase the risk of health problems such as heart disease, high blood pressure, anxiety and depression .

Sleep disturbances: Work stress can lead to sleep disturbances such as insomnia and poor sleep quality. According to a study published in the journal Sleep, there is a significant link between work stress and sleep problems.

Mental health issues: Work stress can have a negative impact on mental health. According to a study by the British Psychological Society, there is a link between work stress and mental health problems such as anxiety, depression and emotional instability.

Decreased job satisfaction: Job stress can lead to decreased job satisfaction. A study published in the Journal of Work and Health found a negative correlation between job stress and job satisfaction.

## What Problems Our Customers Face



Figure 2.1 The analysis of customers face

## 2.2 Provide solutions to customer problems



Figure 2.2 Provide solutions to customer problems

Designing shelves to attract consumers and increase their desire to buy is an important task. We do this to design shelves that are more appealing to consumers:

1) Product display: When displaying products on shelves, make sure they are easy to see and touch. Place your most popular or best-selling products at eye level to grab the attention of shoppers.

2) Layout and Navigation: The layout of the shelves should be concise and easy to navigate. Use clear signage and directions to help consumers find what they're looking for. Group related products together so consumers can easily compare and choose.

3) Lighting and decoration: Good lighting can improve product visibility and add attractiveness to shelves. Use proper lighting to accentuate the features and qualities of the product. In addition, the decoration of the shelves can also attract consumers' attention, such as using bright colors or attractive patterns.

4) Promotions and specials: Setting up promotions and specials on the shelves can attract consumers' attention and stimulate their desire to buy. Use prominent logos and labels to highlight the benefits and value of promoted products.

5) Product information and display: Provide clear and detailed product information, such as price, function, usage, etc. Use engaging presentations, such as product schematics, demo videos, or sample displays, to help consumers better understand your product.

6) Shopping experience: Ensure that the environment around the shelves is clean and comfortable, and provide enough space for consumers to browse and select products. Consider providing seating or a trial area where consumers can better experience the product.

7) Feedback and improvement: regularly collect feedback and opinions from consumers to understand their views on shelf design. Improve and optimize based on feedback to meet consumer needs and expectations.

The shelf design should be customized according to the target market and product type. We need to understand your consumer groups and design shelves according to their preferences and buying habits, which will help increase their satisfaction and purchase intention.

### 2.3 Good Shelving case



Figure 2.3 711 Retail convenience store shelf case

The advantages of 711 convenience store shelves are as follows:

1) Diversified product display: 711 convenience store shelves have flexible and diverse designs, which can display various types of products, including food, beverages, daily necessities, tobacco and alcohol, etc. This variety of display methods can meet the various needs of consumers and provide more choices.

2) High space utilization efficiency: 711 convenience store shelves are usually displayed vertically, which makes full use of the vertical space and makes the product

display in the store more compact. This design can display more products in a limited space, improving the space utilization efficiency of the shelf.

3) Convenient pick-up and shopping experience: 711 convenience store shelves usually adopt an open design, allowing consumers to pick up and browse products conveniently. The products on the shelves are arranged neatly and orderly, making it easy to find what you need, providing a convenient shopping experience.

4) Promotion and display optimization: 711 convenience store shelves are usually optimized for display according to seasons, festivals or promotional activities. Through reasonable product placement and display layout, it can attract consumers' attention, promote sales and improve product visibility.

5) Fast replenishment and management: 711 convenience store shelves usually adopt a fast replenishment and management system to ensure that there are always enough products on the shelves. This efficient replenishment and management system reduces out-of-stock situations and provides a better shopping experience.

6) Brand image and consistency: The shelf design of 711 convenience stores is usually consistent with the brand image, so that consumers can find familiar layout and display methods in different stores. This consistency can enhance brand recognition and consumer trust.

## **Chapter 3**

### **A preliminary attempt at the project**

#### **3.1 Material and methods**

##### **Material:**

Metal: Metal shelves generally have high strength and durability and are suitable for carrying heavier products. Common metallic materials include steel and aluminum alloys.

Wood: Wood shelves have a natural beauty and warmth and are suitable for displaying light products. Common wood materials include solid wood, plywood, and fiberboard.

Plastic: Plastic shelves are lightweight, easy to clean and corrosion resistant, making them suitable for retail and food industries. Common plastic materials include polypropylene and polyvinyl chloride.

Glass: Glass shelves offer transparency and modernity, and are suitable for displaying high-end products or items that need to be displayed prominently.

##### **Method:**

Modular design: The modular design can make the shelves easy to assemble and adjust to meet different display needs and space constraints. The modular design also allows for easy maintenance and replacement of parts.

Adjustability: The adjustability of the shelves can be adjusted according to the size and height of the products to provide more flexible display methods.

Ease of installation and removal: Consider the installation and removal process of shelves to ensure easy, efficient operation and minimal disruption to the store environment.

Stability and Safety: Make sure the shelves have enough stability to prevent tipping or accidents. Consider using deadbolts, support rods, or other stabilizing devices for added shelf stability.

Sustainability Considerations: Select sustainable materials and manufacturing processes to reduce environmental impact. Consider the use of recycled materials, energy-efficient designs, and eco-friendly coatings, among other things.

### **3.2 Cases of poor and good business conditions**

Cases of poor business conditions:

Supermarket A: The shelf display is chaotic, the products are placed out of order, and the lack of clear classification and identification makes it difficult for consumers to find the products they need, poor shopping experience, and sales decline.

Supermarket B: The shelf display is overcrowded, products are piled up together, lack of space and visibility, it is difficult for consumers to browse and compare products, and purchase decisions are hindered, resulting in a decline in sales.

Examples of good business conditions:

Supermarket C: The supermarket adopts a well-designed shelf display layout, which is classified and partitioned according to product types and needs. Products are neatly arranged for easy browsing and comparison. The display area is also equipped with clear price tags and promotional information to attract consumers' attention. This effective shelf display layout has helped increase sales and customer satisfaction.

Supermarket D: This supermarket pays attention to the creativity and attractiveness of product display. They used various display techniques such as

product stacking, color matching and the use of decorations to create a unique shopping experience. This creative shelf display attracts consumers to come in and shop.



## Chapter 4

### Mid-term development status of the project

#### 4.1 First edition model



Figure 4.1 First edition model

## 4.2 Second edition model

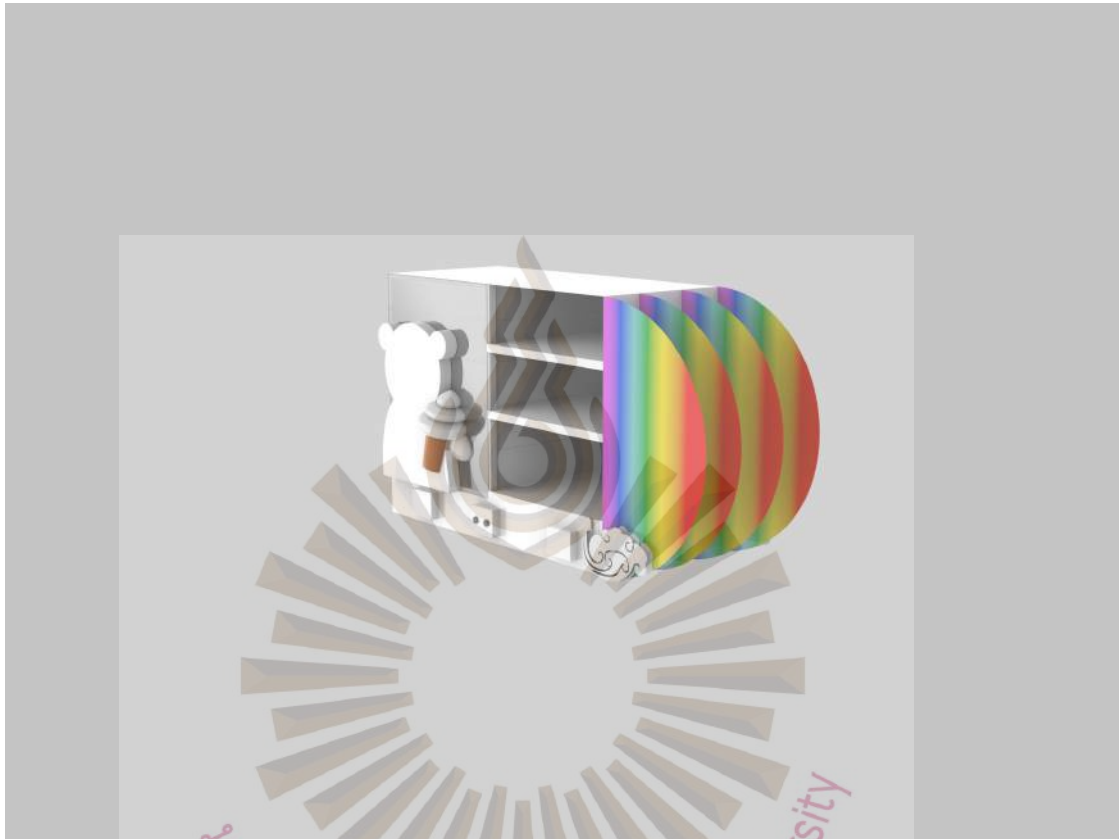


Figure 4.2 Second edition model

Disadvantages of this shelf-first model may include the following:

1) Not stable enough: The first model may have some problems in the design and manufacturing process, resulting in poor stability. This may cause the shelf to be prone to tipping or instability when carrying heavy loads, increasing the risk of the goods falling or the shelf collapsing.

2) Limited load-bearing capacity: The first model may not have been fully tested and optimized, and its load-bearing capacity may not be sufficient to meet actual needs. This may cause the shelf to be unable to bear the weight of the heavy items, causing the shelf to deform, damage or collapse.

3) Unreasonable structure: The first model may have structural design problems, resulting in poor stability and firmness of the shelf. For example, the connectors may not be strong enough, and the support columns may not be strong enough, and these problems may cause the shelves to be easily deformed or damaged.

4) Improper material selection: The first model may have problems in material selection, choosing unsuitable materials or poor quality materials. This may result in less durable and less stable racks that are susceptible to external environmental influences such as humidity, temperature changes, etc.

5) Imperfect production process: The first model may have problems in the production process, resulting in poor manufacturing quality of the shelf. For example, welds may be defective and the finish may be uneven, all of which can make shelves prone to rust, corrosion or damage.

It should be noted that both the design of the model and the manufacturing process may have different problems. Therefore, when we choose and use shelves, we should carefully evaluate their quality and performance, and choose reliable products that have been fully tested and verified.

## Chapter 5

### Final project

#### 5.1 Project model



Figure5.1 Front of Shelf



Figure5.2 Bottom Part of Shelf



Figure5.3 Side Back of Shelf



Figure5.4 Hook Details of Shelf



Figure 5.5 The Shelf Near The Checkstand



Figure 5.6 Final Product Model Outside

This study aims to design and build a multifunctional shelving system to meet the needs in stores and retail environments. The shelf system is divided into six parts, namely the front bottom locker, the side rainbow panel trim, hook details, the other side of the shelf and the side of the shelf.

The front bottom is configured with three lockers, of which the left and right two drawer type push and pull lockers are used to store spare parts for backup, convenient replenishment; The middle locker has two doors and is suitable for storing slender products. The side features two rainbow panels designed to inspire customers.

The rainbow board symbolizes the sunshine after a storm, encourages people to believe in the existence of rainbows, and attracts the attention of customers with its bright colors. The side is divided into two layers, each layer is provided with two layers of iron hooks, and there are three layers of hooks on the rainbow board for hanging other stationery product.

In the hook detail section, each layer of hooks consists of two parts. Part of it is used to connect the price tag, and there is a two-dimensional

code attached. The store can upload the parameter information related to the product and the usage instructions to the two-dimensional code management software to realize the management and transmission of information; The other part is used to directly link products and provide a convenient shopping experience.

The other side of the shelf is designed with nine holes in each row, divided into five rows. The bottom is covered with long boards for other products such as toys and stereos, price hooks can be embedded in the middle, short boards can be embedded in the top, and other hooks can be used.

And one side of the shelf (the other side without the rainbow part). Two wooden push rods can be installed, and four wheels are installed at the bottom of the shelf. In this way, the shelves can be made into sales carts, which is more convenient for external consumers to shop.

## **5.2 Conclusion**

Shelf display is a crucial marketing strategy in the retail industry, which has a direct and far-reaching impact on consumer purchasing behavior, product sales and profits. By deeply studying the layout and design of shelves in local supermarkets, we can reveal the motivation behind consumer behavior, optimize display strategies, and improve sales effect and competitive advantage.

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## Biography

Name	Chang Yue
Date of birth	October 9, 1997
Place of birth	Puyang / Henan China
Education background	Sichuan University of Media and Communications Bachelor of Art of Broadcasting and Hosting, 2020 Rangsit University Master of Fine Arts in Design, 2023
Address	Chengdu / Sichuan China
Email Address	479107290@qq.com

