Shop layout design analysis -
case of localized coffee shops.

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ABSTRACT

Introduction: I surveyed whether the coffee shop is designed differ according to location. Method: The method is composed of two parts: Gathering findings and Analysis of findings. Gathering findings: Findings are gathered by direct observation, at four coffee shops at Osaka. Analysis of findings: data analysis for customers and shops using the mathematical quantification theory class III, sentence completion test (SCT) and formal concept analysis (FCA).

Results: Results were obtained by dividing into three, customer characteristics, shop characteristics, customer and shop relations. Customers characteristics at four shops mapped to two axes (purpose (work-conversation) and staying time (short-long)). Shop characteristics also summarized the concept of the shop which gathered 4 shops. To visualize the relationship between the customer and the shop by formal concept analysis (FCA). Conclusion: As the result of analysis, shops were designed too carefully for each area. Then, the coffee shop observed has been carefully attentive to local consideration at each level in three layers of "common consideration", "customer consideration" and "local consideration".

Keywords: Observation, Sentence completion test (SCT), Formal Concept Analysis (FCA), Shop layout

1. Introduction

I surveyed whether the coffee shop is designed differ according to location. To improve customer satisfaction, it is considered that the service industry is designing shops for local area, but since the shops’ management strategy is basically unpublished. Therefore, I developed observation and analysis method by direct observation.

2. Method

The method is composed of two parts: “Gathering findings” and “Analysis findings”.

2.1 Gathering findings

Findings are gathered by direct observation, at four coffee shops at Osaka (Shop A, Shop B), Hyogo (Shop C), Kyoto (Shop D) in Japan. Observation is done from quantitative and qualitative point of view using two formats. Researcher noted the memos using the two formats for the customer characteristics (sex, age, purpose, staying time, number of people in group etc…) and shop characteristics (good point in the environment and employee operation).

2.2 Analysis of findings

(1) Data analysis for customers
Customer characteristics are grouped by mathematical quantification theory class III as category data on customer's purpose and staying time.

(2) Data analysis for shops
Since the observation data is free description, it is divided into the item and its function using the sentence completion test (SCT) to equalize granularity, and the virtual shop structured concepts of each shop made with them. This SCT is adapted the format which is “Because [ ],[ ] is [good/bad]”.

(3) Understand the relationship between customers and shops’ characteristics
Each analysis data is analyzed by formal concept analysis (FCA) to extract common items. Formal concept analysis is one of data analysis methods and is a method that can analyze the conceptual structure based on mathematics.
3. Results

Results were obtained by dividing into three, customer characteristics, shop characteristics, customer and shop relations.

3.1 Customer characteristics

I observed various customers at 4 shops and mapped the purpose, staying time and other characteristics of each customer using the quantification methods class III. For example, grasped customers’ purpose are “Eating food”, “Operating the mobile phone”, “Listening to music”, “Reading magazines / books”, “Studying”, “Talking with friends”, and so on.

Customers at four shops mapped to two axes (purpose (work-conversation) and staying time (short-long)) (see fig.1). The characteristics of customers are also strongly related to the characteristics of shops. For example, in Shop C (Hyogo), there is space to settle down alone like a hideout. Therefore, it has a long staying time and is suitable for reading books.

3.2 Shop characteristics

Characteristic of shop can be analyzed by structuring 4 shops findings by free texts using sentence completion test (SCT). While clarifying the concept of each shop (see fig.2), we also summarized the concept of the shop which gathered 4 shops. Characteristics of each shop will be clarified.

3.2.1 Shop A (Osaka)

The shop has shop characteristics such as "calm space", "casually drop in" and "Concentrate on personal tasks", customer characteristics such as “short staying time”, “time crushing and time adjustment”, and the top-level shop concept of "Short immersive work space".

3.2.2 Shop B (Osaka)

This shop is located in an entertainment facility, and has shop characteristics such as "the space where you can enjoy conversation" and the top-level shop concept of "comfort conversation space".
3.2.3 Shop C (Hyogo)

This shop has shop characteristics such as "relaxed space", "casually drop in", "bright room", "casual atmosphere", customer characteristic such as a purpose and stay for a long time, and the top-level shop concept of "Relax personal space".

3.2.4 Shop D (Kyoto)

This shop has "Kyoto stylish", "Settling space", "I want to enjoy conversation", and as the customer characteristics are many tourists, the top concept is "Hospitality for tourists".

3.3 Customer and shop relations

To visualize the relationship between the customer and the shop by formal concept analysis (FCA). With FCA, it is shown how many shops are applicable for a certain item, items that apply to all shops at the top, and single shop items at the bottom. Hasse diagram generated by FCA is shown in fig. Hasse diagram is complex, so we prepared simple reinterpretation (See fig 7)

Items concerning customers and shops obtained were classified (common consideration, customer consideration, local consideration) by the following three layers.

3.3.1 Common consideration
(common items: 75% higher)

There are items such as “employee operation is With FCA, it is shown how many shops are applicable for a certain item, items that apply to all shops at the top, and individual shop items at the bottom “hospitality operation”, “findable from outside”, and “casually drop in”.

3.3.2 Customer consideration
(common items: 25-75%)

This items with different shop policies are gathered in this layer. Customer types are extracted 2 types: “for working” or “for relaxing”. Tables, chairs and space is designed for each type.
3.3.3 Local consideration  
(common items: 25% lower)

It is a feature only in some shops. For example, there are Kyoto, wide passageway (large luggage is easy to move) and big table (easy to talk with in large numbers). These are special considerations for tourists.

3.4 Mixed shops design concept

The mixed shop design concept (see fig.8) was generated from the each shop design concept organized common items. The shop characteristics and customer characteristics were categorized into "common consideration", "customer consideration" and "local consideration".

Common considerations include Hospitality and Findability. The goodness of correspondence of the staff and easy to find the shop can be said for any shop.

For customer consideration, it is necessary to change the space according to the purpose desired by customers. It is a job or a conversation.

Regarding local consideration, it is necessary to design the entrance, interior, space (layout) according to the local unique context.

4. Conclusion

As the result of analysis, shops were designed too carefully for each area. When we looked at the coffee shop we observed, a comfortable space corresponding to the area was extracted.

Then, when examining the relationship between customer characteristics and shop characteristics, the coffee shop observed has been carefully attentive to local consideration at each level in three stages of "common consideration", "customer consideration" and "local consideration".

References

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