On Influence of Façade Type on the Image of Shopping Street

Façade, pedestrian, impression, street space

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1. Introduction

1.1 Background

In recent years, the decline of traditional shopping streets in Japan has emerged as a pressing issue, particularly in regional urban centers. Station-front commercial districts, once vibrant hubs of local activity, have experienced a gradual erosion of vitality. This trend is evidenced by rising vacancy rates and the widespread perception of these areas as deteriorated or deserted. Such impressions are often formed unconsciously, as individuals associate the absence of pedestrian activity with spatial abandonment.

Despite this decline, certain shopping streets have demonstrated signs of revitalization through coordinated efforts involving local business associations, enterprises, and hospitality establishments. Temporary events organized by these stakeholders have occasionally succeeded in generating short-term vibrancy. However, the sudden influx of people into previously quiet spaces has been observed to elicit a sense of spatial incongruity. This reaction may reflect an implicit cognitive expectation regarding the typical density of human presence in specific urban environments.

The COVID-19 pandemic further highlighted this phenomenon. The abrupt disappearance of crowds from public spaces created an atmosphere perceived as abnormal or unsettling. This suggests that individuals possess an internalized spatial schema—a subconscious sense of how populated a given location "should" be under normal conditions.

2. Purpose

This study seeks to investigate the cognitive mechanisms underlying perceptions of appropriate crowd density in urban spaces. Specifically, it aims to clarify how individuals intuitively assess the "suitability" of human presence in residential neighborhoods and shopping streets.

Numerous environmental factors may influence such perceptions, including ambient lighting, spatial configuration, and street width. To isolate key variables, this research focuses on residential areas commonly found across Japan, examining how varying levels of pedestrian presence affect perceived spatial appropriateness.

3. Survey

3.1.1 Survey 1: Residential Environments

A series of images depicting residential streetscapes were prepared, each featuring between zero and ten individuals. These images were evaluated using a paired comparison method to assess preferences regarding crowd density.

Figure 3.1: Photograph A

Figure 3.2: Photograph B

Figure 3.3: Photograph C

3.1.2 Results

Across all image sets, photographs depicting ten individuals received the lowest preference scores. Conversely, images with zero individuals were consistently rated highest.

When six or more individuals were present, newer residential environments were favored over older ones. The rate of change in scale values across photographs A to C exhibited a consistent pattern. Notably, when the number of individuals was four or fewer, the relative rankings of photographs A and B shifted, indicating a nuanced interaction between architectural context and perceived crowd appropriateness.

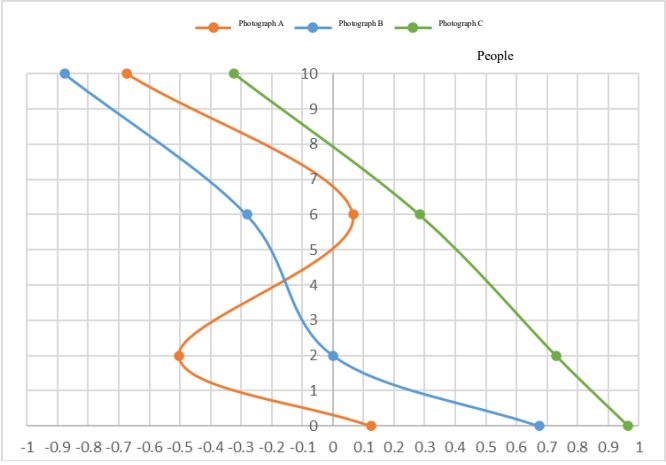

Figure 3.4: Scale value rankings by number of individuals

3.2.1 Survey 2: Commercial Environments

Building on prior research by Arima et al. regarding storefront typologies and their influence on street appeal, this study adopted a five-category classification of facades:

- **Open Type**: Direct integration of storefront and street through open facades
- **All Type**: Full glass frontage allowing complete visual access to the interior
- **Half Type**: Partial transparency (50–70%) with visual barriers such as curtains or mirrored glass
- **Part Type**: Limited transparency (≤50%) with partial interior visibility
- **Close Type**: Fully enclosed facades isolating the interior from the street

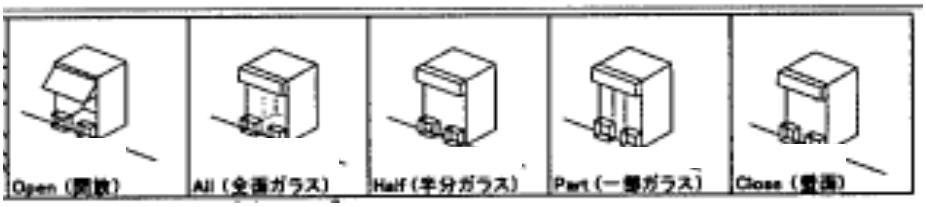

Figure 3.5: Facade classification

To examine the interaction between architectural form and crowd density, images of shopping streets were created featuring either one or three A-Type stores. Each image was populated with 0, 2, 6, or 10 individuals and evaluated using paired comparisons.

3.2.2 Results

Figure 3.8 presents scale values by crowd level, while Figure 3.9 compares preferences for A1 and A3 configurations. The horizontal axis represents the number of individuals depicted; the vertical axis indicates the frequency with which each image was selected during comparisons. When six individuals were present, the A3 configuration was preferred. In contrast, when ten individuals were depicted, the A1 configuration received higher preference scores. These findings suggest a reversal in the relative influence of architectural form and crowd density depending on the level of human presence.

3. Conclusion

This study explored the cognitive perception of appropriate crowd levels in residential and commercial urban environments using a paired comparison methodology.

Survey 1 revealed that preferences in residential areas are influenced by architectural uniformity, ambient brightness, and the proportion of visible street space occupied by pedestrians. These results indicate that individuals possess a consistent internal standard regarding suitable crowd density.

Survey 2 demonstrated that both architectural form and the number of individuals significantly affect perceptions of vibrancy. When six individuals were present, facade configuration exerted a stronger influence. Conversely, when ten individuals were depicted, crowd density became the dominant factor. These findings suggest a threshold at which the perceived impact of architectural features is overtaken by the sheer volume of human presence.

Figure 3.6: A-Type with one store

Figure 3.7: A-Type with three stores

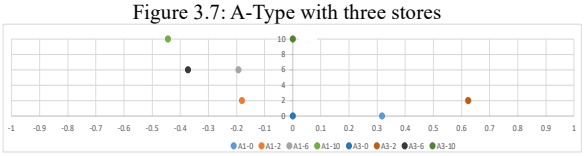

Figure 3.8: Scale value rankings

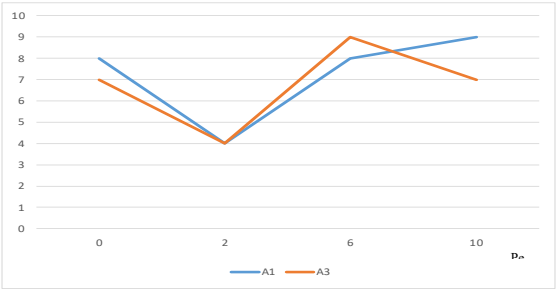

Figure 3.9: Comparative analysis of A1 and A3 by number

4. Reference

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