Jewelry Shop Window Design Elements Created based on the Kano Model

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Abstract

As the economy grows, competition between jewelry brands has become increasingly intense, demanding that shop windows be designed according to the unique characteristics of each jewelry brand to increase customers' purchase intentions and revenue. This study examined customers' latent psychological demands for jewelry shop window design elements to provide a reference for jewelry brands and designers to design shop windows that cater to the market and create brand value. The Kano model and an online questionnaire were employed to classify customers' demands for various jewelry shop window design elements and the elements most strongly associated with customer satisfaction and service quality. These elements should be prioritized to ensure their optimization. The results revealed that customers are relatively indifferent toward product price display, the material of window props, and window size, but optimized window colors, window lighting, viewing angles, product concepts, window atmosphere, and window layouts effectively elevated customer satisfaction. Thus, jewelry brands and designers should focus on using props to highlight brand concepts, create an enticing window atmosphere, and optimize window lighting and layout, customers' viewing angles, and overall window color designs when designing shop windows to enhance brand image and competitiveness in the jewelry market.

Keywords: *customer satisfaction, design element, jewelry, Kano model, window design*

I. Introduction

In today's society, shopping has become more than just a means to acquire necessities and satisfy survival needs; it is also a recreational activity in people's daily lives. Because shop image is a decisive factor determining whether customers will visit a shop, it has gained considerable attention from market researchers [1]. Shop windows have always been a crucial part of shop image because they convey trend information and brand positioning to customers.

As the economy grows, people begin to seek spiritual fulfillment, and their demand for jewelry rises. Jewelry products have become increasingly diverse, and competition between jewelry brands has become increasingly intense. Thus, the window designs of jewelry shops are crucial for image promotion and market competition. Jewelry brands must continually optimize their business management standards; actively create new jewelry products; provide high-quality services; and design windows according to their unique styles, contents, positioning, and grades to attract customers, facilitate their purchase intentions, and increase revenue.

This paper focuses on the psychological demands of customers in the context of jewelry shop window design elements. The Kano model was employed to clarify customers' demands for design elements, which provide a reference for brands and designers to design shop windows that cater to the market and create brand value. The goals of this study are as follows:
Classify jewelry shop window design element demands by using the Kano model.
Rank the design elements according to customer demands and verify their priorities.

II. LITERATURE REVIEW

2.1 Shop Window Design

Window displays serve not only the purpose of conveying the type and positioning of merchandise to customers but they can also be used to promote the strategies and images of the corporation itself [2]. Shop windows influence customers' cognition of shop and brand image, prompting them to enter a shop [3]. The extant literature on store windows suggests that the presence[4] and size [5] of store windows determine their ability to attract visitors to a store. Customers tend to prefer shops with creative window displays to those with plain windows[6]. Relevant literature proposes 14 main design elements for shop windows: regular props, size, spotted light, text, opaque mannequins, simple props, warm colors, graphics, in-store visibility, conceptual design, in-store invisibility, clear mannequins, typography, and product separation; designers should use these elements when designing shop windows to maximize customers' purchase intentions [2].

2.1.1 Jewelry shop window design

Jewelry has been an indispensable element as a complementary of elegancy from prehistoric times to the present day. Jewelry has been used as an element of elegancy, a mystical symbol, an indicator of status, and an element of wealth and power during various stages of history [7]. Because jewelry appears in department stores in major cities as mass-produced merchandise today, jewelry shop windows are critical for communication between jewelry brands and customers. These windows are crucial for promoting jewelry products, establishing brand image, improving brand reputation, ensuring service quality, and increasing sales. Jewelry products are typically small and expensive, and attention to detail is vital when designing product displays [8]. Therefore, the design elements of jewelry shop windows must be selected according to the characteristics of the products being displayed.

2.2 Kano Model and Customer Satisfaction

2.2.1 Kano model

The Kano model, developed in 1984 by the Japanese quality management expert Noriaki Kano with inspiration from the two-factor theory by Fredrick Herzberg, is a two-dimensional cognitive model for measuring product quality satisfaction and customer satisfaction [9]. The model divides customer demands into five categories: basic, expected, excited, indifferent, and reverse demands. These five needs must be investigated by collecting customer information through a Kano questionnaire, which can clarify the relationship between customer satisfaction and product or service quality, thereby improving the effectiveness of the analysis of customer demands [10]. The Kano model is a breakthrough in design concepts normally limited to tangible entities because it defines design from the perspectives of customers, enabling designers to focus on the emotional demands of customers and provide them with satisfactory experiences [11].

2.2.2 Customer satisfaction

The Kano model is an instrument used for evaluating customers' perceptions of service quality to confirm their immediate expectations and demands, which enables designers to improve design accuracy, thereby improving customers' overall satisfaction with products or services [12]. Customer satisfaction is measured on two indices, namely satisfaction index (SI), which denotes the level of customer satisfaction toward a product or service, and dissatisfaction index (DSI), which denotes the level of customer dissatisfaction toward a product or service that fails to meet their demands [11]. Berger et al. [13] proposed the better–worse coefficient, which is a customer satisfaction coefficient calculated by dividing the "better" coefficient after increase (i.e., SI) by the "worse" coefficient after decrease (i.e., DSI), as demonstrated in the following equations:

Better coefficient after increase: $$Better(SI) = \frac{A+O}{A+O+M+I} \quad (1)$$

Worse coefficient after decrease: $$Worse(DSI) = -\frac{M+O}{A+O+M+I} \quad (2)$$

After design element requirements are classified using the Kano model, the better and worse coefficients of each element are calculated using Equations (1) and (2) to clarify customers' sensitivity to changes in design elements. The elements with the highest sensitivity require improvement to increase customer satisfaction [14].

Studies have employed multiple perspectives to analyze the function and value of shop window designs and the relationship between design elements and customers, offering insight into shop window design. Because jewelry differs considerably from other types of products, this study examined customers' psychological demands for jewelry by using the Kano model and calculated the better–worse coefficients accordingly [13]. An objective and accurate priority order of jewelry shop window design elements were thus determined to provide a new approach for designing jewelry shop windows, thereby enhancing the image of jewelry brands and their competitiveness in the jewelry market.

III. RESEARCH METHOD

Fig 1 illustrates the framework of this study. The researchers confirmed the design elements of jewelry shop windows and formulated a questionnaire by using the Kano model. The questionnaire was distributed to participants, and valid responses were analyzed, thereby clarifying the types and levels of customer demands for the design elements.

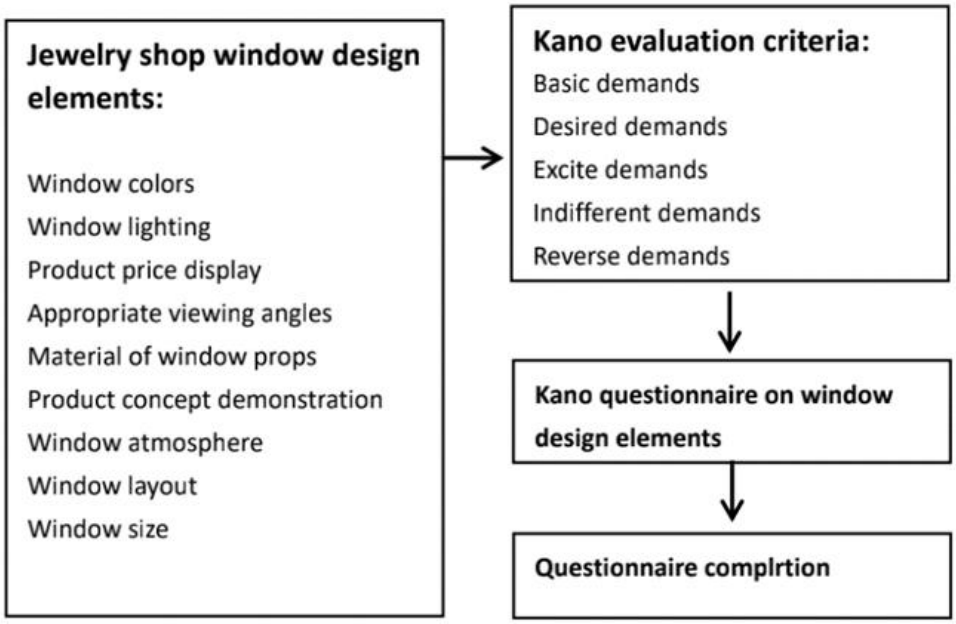

Fig 1: Research framework. (Authors, 2021)

3.1 Establishing the Jewelry Shop Window Design Elements

According to relevant studies, the 14 main design elements of shop windows are regular props, window size, spotted light, text, opaque mannequins, simple props, warm colors, graphics, in-store visibility, conceptual design, in-store invisibility, clear mannequins, typography, and separate products [2]. In this study, the following nine elements were adopted following expert interviews: window colors, window lighting, product price display, appropriate viewing angles, the material of window props, product concept demonstration, window atmosphere, window layout, and window size.

3.2 Adapting the Kano Questionnaire to Shop Window Design Elements

The Kano questionnaire comprises two parts: (1) respondents' demographic information, which includes sex, age, occupation, education level, and shopping frequency; and (2) questionnaire items on jewelry shop window design elements, which constitute the main proportion of the questionnaire. Positive and negative questions were designed to determine the satisfaction and dissatisfaction with each design element, and included "How do you feel when you

are satisfied with a particular design element, and "How do you feel when you are dissatisfied with that element?" Respondents evaluated their emotional levels on a 5-point Likert scale (1 = I like it a lot; 2 = As it should be; 3 = Does not matter; 4 = Barely acceptable; 5 = I dislike it a lot). The responses were compared using the Kano evaluation table to classify the design element requirements (Table 1) [15]

3.3 Questionnaire distribution and return

The questionnaire was designed using the website Quick Survey and distributed online through social networking websites over 3 weeks. In the end, a total of 249 valid responses were returned.

3.4 Reliability and factor analysis

Table 1 Kano evaluation table. (Matzler & Hinterhuber, 1998)

Kano evaluation						
Product demands		**The effect of this element is unsatisfactory**				
		I like it a lot	**As it should be**	**Does not matter**	**Barely acceptable**	**I dislike it a lot**
The function of this element is effective	I like it a lot	Q	A	A	A	O
	As it should be	R	I	I	I	M
	Does not matter	R	I	I	I	M
	Barely acceptable	R	I	R	R	M
	I dislike it a lot	R	R	R	R	Q

Reliability analysis was conducted to determine the quality of the questionnaire items [16]. Specifically, the internal consistency of the questionnaire was verified using Cronbach's α.

A validity analysis was performed to verify the accuracy of the questionnaire in measuring specific items. Validity refers to the consistency of the survey results with the items to be examined. Higher consistency indicates higher validity [17]. The validity of the questionnaire in this study was determined through exploratory factor analysis.

IV. RESEARCH RESULTS

4.1 Questionnaire Reliability and Validity

The Cronbach's α values of the positive and negative questions were 0.742 and 0.783, respectively. Both values exceeded 0.7, indicating satisfactory questionnaire reliability.

The questionnaire items were designed according to the findings of Somoon and Sahachaisaree [2] regarding shop window design elements and the findings from expert interviews in the current study, showing that the content validity of the questionnaire was satisfactory. SPSS 23 was applied for factor analysis of the Kano questionnaire. The positive and negative questions exhibited Kaiser–Meyer–Olkin values of 0.727 and 0.822, respectively. Both exceeded 0.5, confirming that the questions were suitable for factor analysis. In Bartlett's test of sphericity, both types of questions exhibited χ^2 values of 0.000, lower than 0.01, indicating that the correlation of the data was significant, thereby verifying them as suitable for factor analysis. Accordingly, the construct validity of the questionnaire was satisfactory.

4.2 Respondents' Characteristics

Table 2 presents the following demographic information of the respondents (jewelry shop customers): (1) More female respondents completed the questionnaire than male respondents did; (2) people aged 18–29 years consisted of 70% of the respondents and reflected the primary jewelry customer population; (3) students and corporate office workers comprised the majority of the respondents; (4) people a university-level education or higher constituted 88%

of the respondents; and (5) approximately 67% of the respondents shopped at large shopping malls each month, indicating that visiting shopping malls was an indispensable monthly recreational activity for most customers. Accordingly, shopping at large shopping malls has become a basic recreational activity in daily living for young people with higher education levels. For all industries, shop windows satisfy social aesthetic demands and improve the image and reputation of brands. Moreover, enterprises display their latest products through these windows to convey business information and values to customers for the first time.

4.3 Kano Classification and Analysis on the Design Elements

The Kano evaluation table (Table 1) was the basis of the Kano questionnaire result assessment, with A, M, O, I, R, and Q representing the customer demand excited, expected, desired, indifferent, reverse, and questionable quality, respectively.

Based on the Kano evaluation criteria presented in Table 1, the questionnaire results for shop window design elements were summarized, and the maximal values were the basis for the categorization of each element. That is, each element was classified in the Kano category to which it scored the highest. Thus, the Kano category to which each element belongs was identified. Table 3 presents the classification of the jewelry shop window design elements.

As presented in Table 3, product price display, the material of window props and window size belong to Category I (indifferent demands), whereas window colors, window lighting, appropriate viewing angles, product concept demonstration, window atmosphere, and window layout belong to Category A (excited demands).

Table 2. Demographic information of the respondents. (Authors, 2021)

Statistical item	**Answer**	**Number of responses (%)**
Sex	Male	83 (33.33%)
	Female	166 (66.67%)
Age	<18	10 (4.02%)
	18–24	124 (49.80%)
	25–30	33 (13.25%)
	31–40	40 (16.06%)
	41–50	14 (5.62%)
	51–60	11 (4.42%)
	≥61	17 (6.83%)
Occupation	Corporate office worker	41 (16.47%)
	Government, organization, or society officials; civil servants	6 (2.41%)
	Professionals (e.g., doctors, lawyers, teachers)	32 (12.85%)
	Self-employed	15 (6.02%)
	Freelancer	19 (7.63%)
	Student	103 (41.37%)
	Housewife/househusband	6 (2.41%)
	Retired	19 (7.63%)
	Other	8 (3.21%)
Education level	High school	29 (11.65%)
	Undergraduate/College	181 (72.69%)
	Master's	29 (11.65%)
	PhD or higher	10 (4.02%)
Frequency of shopping mall visits	Everyday	5 (2.01%)
	At least once per week	73 (29.32%)
	At least once per month	86 (34.54%)
	Rarely	85 (34.14%)

4.3.1 Excited demands

Customers did not expect much for design elements to excite them. However, for jewelry shop windows designed to excite customers, customers did express excitement, and their satisfaction and fondness of the window designs increased. Excited demands represent customers' latent psychological demands and can be pleasantly surprising for

customers. Therefore, brand designers should focus on optimizing window colors, window lighting, viewing angles, brand concepts, window atmosphere, and window layout when designing shop windows to increase customer satisfaction substantially and enhance the visibility of jewelry brands.

Table 3. Classification of the quality characteristics of jewelry shop window design elements. (Authors, 2021)

Function No. Quality No.	M	O	R	I	Q	A	Total	Category
1. Color	5	13	17	88	24	102	249	A
2. Lighting	28	55	6	66	9	85	249	A
3. Price display	37	39	22	99	8	44	249	I
4. Viewing angle	18	41	4	86	11	89	249	A
5. Material	21	24	4	133	13	54	249	I
6. Concept	9	58	2	53	9	118	249	A
7. Atmosphere	2	29	3	81	7	127	249	A
8. Layout	8	45	1	91	10	94	249	A
9. Size	3	11	23	147	14	51	249	I

4.3.2Indifferent demands

Design elements belonging to indifferent demands did not directly influence customers' satisfaction with shop windows regardless of how they were presented or whether they were presented at all. Accordingly, customers tended to be indifferent toward product price display, the material of window props, and window size.

Overall, according to the questionnaire responses, most of the design elements examined in this study belong to exciting demands. Jewelry brands and designers should focus on enhancing excited demand elements when designing shop windows to provide pleasant surprises and satisfactory experiences to customers, thereby ensuring that shop windows can increase the purchase intentions of potential customers.

4.4 Kano Analysis of Customer Satisfaction

Although the data from the Kano questionnaire enabled classification of the quality of the jewelry shop window design elements, the data did not enable jewelry brands and designers to increase customer satisfaction through shop window designs. Therefore, based on the better–worse coefficient, a customer satisfaction matrix was created to clarify the design elements that must be emphasized (Tables 5 and Fig 2)

As presented in Table 4, SI indicates the ratio of the increase in customer satisfaction when customers are satisfied with a specific design element, and DSI represents the ratio of the decrease in customer satisfaction when customers are dissatisfied with a specific design element [13].

Table 4 Customer satisfaction coefficients. (Authors, 2021)

Function No. Quality No.	Category	Better coefficient after increase (SI)	Worse coefficient after reduction (DSI)
Window colors	A	-0.55	-0.09
Window lighting	A	0.60	-0.35
Product price display	I	0.38	-0.35
Appropriate viewing angles	A	0.56	-0.25
Material of window props	I	0.34	-0.19
Product concept demonstration	A	0.74	-0.28
Window atmosphere	A	0.65	-0.13
Window layout	A	0.58	-0.22
Window size	I	0.29	-0.07

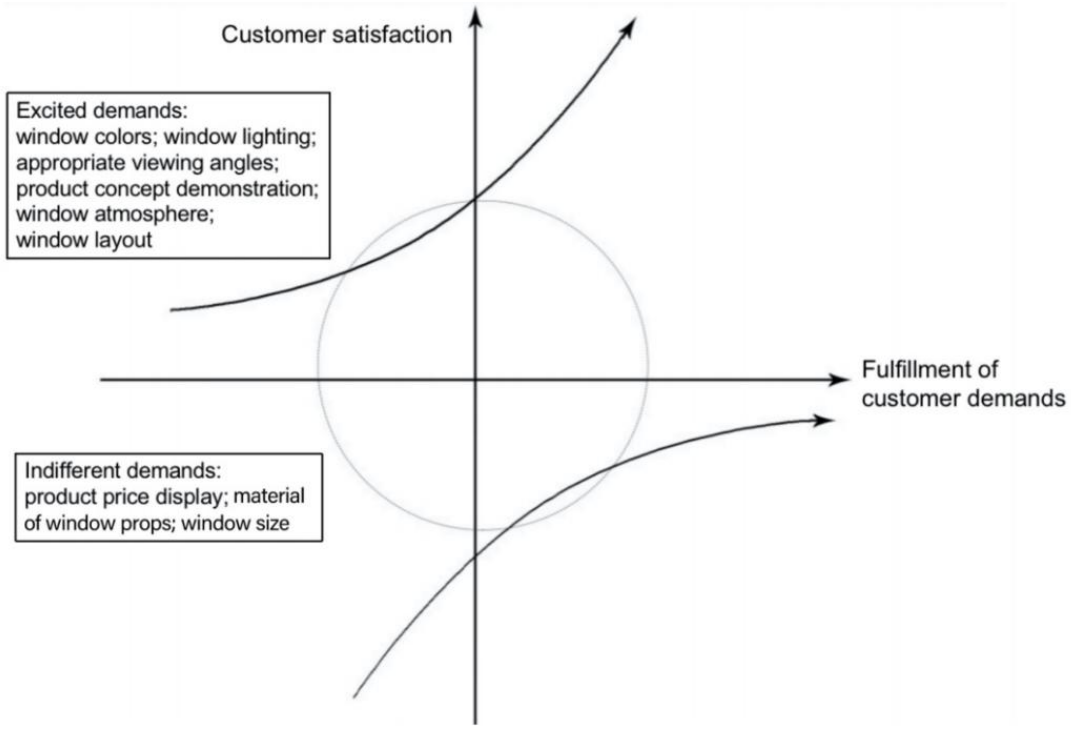

Fig 2: Kano model of jewelry shop window design elements. (Authors, 2021)

V. CONCLUSION

This study employed the Kano model and an online questionnaire to classify the demands for jewelry shop window design elements. The results were analyzed and discussed, leading to the following conclusion:

1. Product price display, the material of window props, and window size belonged to the indifferent demand category. That is, customers were relatively indifferent toward these three design elements. Therefore, they did not considerably affect customer satisfaction toward shop windows regardless of the forms in which they were presented.
2. Window colors, window lighting, appropriate viewing angles, product concept demonstration, window atmosphere, and window layout belonged to the excited demand category. That is, although customers did not expect much for these six elements when these elements were emphasized in jewelry shop window designs, customers were pleasantly surprised, and their satisfaction toward these shop windows increased.
3. The priority order of the Kano demand categories was as follows: expected demands > desired demands > excited demands > indifferent demands. The elements with the highest better coefficients should be prioritized for optimizing jewelry shop window designs. The priority order of the jewelry shop window design elements is as follows: product concept demonstration > window atmosphere > window lighting > window layout > appropriate viewing angles > window colors. For cost efficiency, the considerable emphasis on product price display, the material of window props and window size would not required in jewelry shop window designs.

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